

Quality assurance statement

(a) Activities to be performed and the criteria for determining acceptable data quality. In this project we will be monitoring outdoor air quality for particle number concentration (a proxy for ultrafine particles) and PM_{2.5} and PM₁₀ (the mass concentration of particles ≤2.5 and 10 microns in diameter). We will use Testo DiSCmini analyzers (<https://www.testo.com/en-US/testo-discmini/p/133>) to measure ultrafine particles and Dylos 1700 (<http://www.dylosproducts.com/dcpmagm.html>) to measure PM_{2.5}. Dylos 1700 is a sensor and not a FRM or FRE instrument but it is fit for purpose for the proposed work and has been evaluated by EPA including publication of the operating document for similar 1100 model.¹ No new-to-market technology will be used in this project. The table below summarizes our data quality criteria.

Data Acceptability Criteria

Criteria	Acceptability	Quality Control
Precision (laboratory)	Relative percent difference <20%	Factory calibration* and side-by-side comparison of DiSCmini's and PM _{2.5} monitors.
Accuracy (laboratory and field)	Relative percent difference <20%	Lab comparison of DiSCminis to TSI CPC 3775 and field comparison of PM _{2.5} & PM ₁₀ monitors at regulatory site to obtain correction factor
Representativeness	A field program will be developed to attempt it	
Completeness	≥90% of the data collected meets all other criteria	
Comparability	Similar to historical data	Evaluation of temporal trends with regulatory data (and research data available) before public release of dataset

*Calibrations will be performed by the manufacturer (Testo) using project funds (see budget justification).

To ensure **precision** and **accuracy**, the DiSCminis and PM_{2.5} monitors will be laboratory-tested before deployment in each community and recalibrated annually as recommended by the equipment manufacturers. Laboratory testing will involve side-by-side comparison of the DiSCminis and side-by-side comparison of the PM_{2.5} monitors to make sure they are reading approximately the same value (within 20%). As an additional accuracy check, we will periodically collocate the PM_{2.5} monitors at the Massachusetts Department of Environmental Protection monitoring station in nearby Chelsea (Chelsea Highland Park, #840250251004) to allow cross comparison between our instruments and a federal reference instrument (see letter from Mr. Sean Dunn, Deputy Division Director, Air Assessment Branch, at MADEP) in accordance with EPA sensor collocation guide² and we will obtain a locale specific correction factor for Dylos 1700. To avoid systematic bias and to promote spatial and temporal **representativeness** of the data, we will locate the DiSCminis and PM_{2.5} and PM₁₀ monitors at sites that generally represent the land uses of the study areas and allow the monitors to collect data for several months per study area. We will also conduct mobile monitoring runs using our academic partner's well-established research lab to survey the area and provide preliminary data to pick representative locations. **Completeness** refers to the amount of valid data compared to the total amount of data

¹https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NERL&dirEntryId=308087&simpleSearch=1&searchAll=dynos+dc110

² <https://www.epa.gov/air-sensor-toolbox/air-sensor-collocation-instruction-guide>

collected. The data set will be complete if 90% meets all the other established criteria (precision, accuracy, representativeness, comparability). **Comparability** will be qualitatively evaluated by comparing our results with previous air quality studies in the Boston area involving PNC and regulatory data for PM_{2.5} & PM₁₀ measurements. Before periodic Project funds have been budgeted to pay for one factory recalibration during the duration of the study and accuracy and precision checks of the DiSCminis and PM_{2.5} monitors at start of years 2 and 3 of the field work.

(b) Study design. In this project we will monitor air quality in four communities using a four site network (LMN) and also complete four community-specific monitoring projects (LMCP) (using up to 7 sites/community + mobile monitoring) near transportation hotspots in study areas in four communities. Monitoring will be performed at up to 7 sites per study area. Measurements will be collected at a frequency that will allow both rapid changes (e.g., rush hour vs. non-rush hour traffic; changes in wind direction) and longer-term trends (e.g., diurnal and weekly variations) in air quality to be measured. LMP will monitor continuously and LMCP will be deployed for a duration commensurate to the problem identified by the community for monitoring.

(c) Data retrieval and storage procedures. All air quality monitoring instruments being employed in this study have data storage capacity to collect data continuously for up to several weeks; however, a weekly data retrieval and archiving schedule will be followed. Data will be downloaded from each monitor in the field and stored on a field laptop. Once back at the MyRWA office, data will be archived on a secure server that is regularly backed up. Because the data will be collected, stored, processed, and analyzed by project personnel, no chain of custody reporting will be required.

(d) Data reduction and reporting. All data collected in this project will be subject to statistical analysis. Exploratory data analyses procedures will be employed using widely available commercial software – e.g., Microsoft Excel – to summarize trends in the data and for detecting outliers. It is expected that much of the data will behave in a nonparametric manner, and therefore we will employ nonparametric statistical procedures in analyzing the data. Based on their years of experience in analyzing air quality data, Drs. Hudda and Durant are very familiar with proper statistical methods for processing nonparametric data.

(e) Data sharing. “Data” is defined as any information collected by or as part of the work associated with the project. All data will be collected and managed to existing USA standards. All quality-assured data, metadata and data products such as analyses, figures, tables, GIS datalayers, and maps will be shared with project partners and made available to the public through a project-specific website hosted by MyRWA. All project data and data products will be backed up regularly on the MyRWA server. The project-specific website will have links to it through project partner websites. Thus, all data and data products will be easily and publicly discoverable and downloadable free of charge. Graphic interactive visualizations using web APIs and ESRI ArcGIS Online platforms (Story Maps or Web-App Builder) will also be produced to promote public awareness of the study. Online data visualization and exploration tools in a user-friendly format will be generated for the study to achieve community benefits and increase education about project findings. The primary goal of this project is to convey high-quality actionable air quality data to community and that would be central to all data products prepared for the community engagements, partners in the coalition and local governments, and broader public release.

(f) Personnel. Quality assurance and quality control will be the responsibility of Dr. Durant. It will be his responsibility to (1) oversee all aspects of instrument maintenance, repair, recalibration, side-by-side comparison, and field collocation; (2) oversee data collection and storage efforts; (3) ensure that all data processing protocols are observed; and (4) ensure that all data and data products shared with community partners and the public meet the QC/QC criteria established for the project. Dr. Durant has served in the role of QA/QC supervisor on several previous projects funded by EPA, MA DEP, NIH, and HUD involving environmental data collection. Dr. Durant will also closely train project staff on field and QAQC procedures to ensure sustainability of work post the duration of this study.

BOS:EO:76-483

Department of the Treasury

P.O. Box 9081

JFK Post Office

Boston, Mass. 02203

District Director

Internal Revenue Service

Date:

In reply refer to:

April 6, 1976

EP:EO: R. Martin

Tel: (617) 223-4241



Mystic River Watershed Association
Federal Tax ID# **23-7221094**

▷ Mystic River Watershed Association, Inc.

20 Academy Street, Suite 203
Arlington, MA 02476

Gentlemen:

Based on information supplied, and assuming your operations will be as stated in your application for recognition of exemption, we have determined you are exempt from Federal income tax under section 501(c)(3) of the Internal Revenue Code.

We have further determined you are not a private foundation within the meaning of section 509(a) of the Code, because you are an organization described in section 509(a)(1) & 170(b)(1)(A)(vi).

You are not liable for social security (FICA) taxes unless you file a waiver of exemption certificate as provided in the Federal Insurance Contributions Act. You are not liable for the taxes imposed under the Federal Unemployment Tax Act (FUTA).

Since you are not a private foundation, you are not subject to the excise taxes under Chapter 42 of the Code. However, you are not automatically exempt from other Federal excise taxes. If you have any questions about excise, employment, or other Federal taxes, please let us know.

Donors may deduct contributions to you as provided in section 170 of the Code. Bequests, legacies, devises, transfers, or gifts to you or for your use are deductible for Federal estate and gift tax purposes if they meet the applicable provisions of sections 2055, 2106, and 2522 of the Code.

If your purposes, character, or method of operation is changed, please let us know so we can consider the effect of the change on your exempt status. Also, you should inform us of all changes in your name or address.

(Over)

Form L-178 (Rev. 8-73)

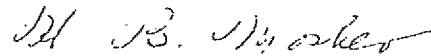
If your gross receipts each year are normally more than \$5,000, you are required to file Form 990, Return of Organization Exempt From Income Tax, by the 15th day of the fifth month after the end of your annual accounting period. The law imposes a penalty of \$10 a day, up to a maximum of \$5,000, for failure to file a return on time.

You are not required to file Federal income tax returns unless you are subject to the tax on unrelated business income under section 511 of the Code. If you are subject to this tax, you must file an income tax return on Form 990-T. In this letter we are not determining whether any of your present or proposed activities are unrelated trade or business as defined in section 513 of the Code.

You need an employer identification number even if you have no employees. If an employer identification number was not entered on your application, a number will be assigned to you and you will be advised of it. Please use that number on all returns you file and in all correspondence with the Internal Revenue Service.

Please keep this determination letter in your permanent records.

Sincerely yours,



H. B. MOSHER
District Director

Effective date as of 3/8/76.



Patrick Herron
Executive Director
20 Academy Street, STE 306
Arlington, MA 02476

Dear Mr. Herron,

The Cambridge Health Alliance is committed to being a partner with the Mystic River Watershed Association on the EPA's Enhanced Air Quality Monitoring for Communities grant program.

Cambridge Health Alliance (CHA) is a public safety net health system with a mission of improving the health of patients and communities. The Health Improvement Team, part of the Department of Community Health Improvement, works together with healthcare providers, residents, community based organizations, and municipal leaders to assess community health, determine priorities, build action plans, and provide leadership around addressing the root causes of health inequity.

CHA has longstanding partnerships with the communities in Everett and Malden through its health care and community health work. CHA will benefit from participating in this project because of the expanded capacity for assessment of air quality as a key environmental risk factor for poor health outcomes, including the distribution of such exposure across neighborhoods and by demographic composition. CHA's work in partnership with municipal leaders, community based organizations, faith based organizations, civic/cultural organizations and community coalitions will benefit from access to high quality data to support efforts to address health equity concerns. Finally, high-quality local data about air pollution can help CHA to drive interest in improving public health data about related health outcomes, including asthma, cardiovascular disease, and cancers.

As a partner on the grant, Cambridge Health Alliance will commit to serving as the lead in connecting the air quality issues with public health issues (messaging and potential behavior change opportunities); assistance in Malden and Everett outreach and hosting of listening sessions; integration of findings of the monitoring into CHA communication channels, where appropriate; attending stakeholder meetings in Malden and Everett, when appropriate; participation in discussions in Malden and Everett on mitigation opportunities; and participation in the quarterly meetings of the project team to assist in guiding the project.

Sincerely,

Kathleen Betts

3/18/2022

Kathy Betts, MPH
Acting Chief Community Officer & Senior Director, Department of Community Health Improvement
Cambridge Health Alliance
1035 Cambridge Street, Cambridge, MA 02138

STATEMENT OF INTENT (SOI)



Funding Pass-Through Entity (PTE) INFORMATION

PLEASE COMPLETE ALL FIELDS

PTE PI	
PTE Institution	Mystic River Watershed Association
Project Title	Enhanced Air Quality Monitoring for Communities in Lower Mystic

COOPERATING INSTITUTION INFORMATION (Subaward/Subrecipient)

Note: F&A = Facilities and Administrative (Indirect) Costs Rate Agreement with U.S. Government

Legal Institution Name	Tufts University		
PI Name	Neelakshi Hudda	ERA Commons ID	
F&A Rate	56.00	Project Period	From: 7/1/2022 To: 6/30/2025
Agmt. Posted Online	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Direct Costs	\$37,883
Link to F&A Agmt.	https://viceprovost.tufts.edu/policies-forms-guides/facilities-administration-fa-and-fringe-rates		Total Costs \$59,097
	F&A Costs	\$21,214	

INSTITUTIONAL INFORMATION

Complete Contact information section is on the attached 3B

Note: fCOI = Financial Conflict of Interest

Website	https://viceprovost.tufts.edu/about-rad		
fCOI Policy	<input checked="" type="checkbox"/> Yes* <input type="checkbox"/> No	Certified on FDP fCOI Clearinghouse	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No *See fCOI certification below.
Annual Audit	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Link to Audit	https://viceprovost.tufts.edu/policies-forms-guides/uniform-guidance-reports
Entity Risk per Audit	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Not Low Findings	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Most Recent Audit Year Completed FY21

PROJECT INFORMATION	YES	NO	ASSURANCE #	APPROVAL DATE OR PENDING
Human Subjects	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Vertebrate Animals	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Human Embryonic Stem Cells	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Inventions And Patents (For Renewal Applications)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Program Income	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

CERTIFICATIONS

In signing below and offering to participate in this research program, the Cooperating Institution certifies that neither they nor their principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from receiving funds from any federal department or agency and are not delinquent on any federal debt; they are in compliance with the Drug Free Workplace Act of 1988; they are in compliance with U.S. Code, Section 1352, restrictions on the use of federal funds for the purpose of lobbying; they have filed annually with the Office of Scientific Integrity a PHS form 6349 governing Misconduct in Science; they have filed with DHHS compliance offices certification forms governing Civil Rights (441), Handicapped Individuals (641), Sex Discrimination (639-A), and Age Discrimination (680); they are in compliance with PHS policy governing Program Income; they have established policies in compliance with 45 CFR Part 46, Subpart A (protection of human subjects); the Animal Welfare Act (PL-89-544 as amended) and the Health Research Exchange Act of 1985 (Public Law 99-158); and that they are in compliance with NIH guidelines regarding human pluripotent stem cell research, transplantation of fetal tissue, recombinant DNA and human gene transfer research, and inclusion of women, children & minorities in research.

* The appropriate programmatic and administrative personnel of each institution involved in this grant application are aware of the PHS-NIH consortium grant policies and are prepared to establish the necessary inter-institutional agreements consistent with those policies. In signing below, the Cooperating Institution certifies it has implemented and is enforcing a written policy of conflicts of interest consistent with the provisions of 42 CFR Part 50, Subpart F & 45 CFR Subtitle A, Part 94. If a conflict is identified by the Cooperating Institution during the period of the award contemplated under this agreement, the Cooperating Institution will report to the PTE the existence of the conflict, including the grant title, PI (if different from the investigator with the financial interest) and the specific method the Cooperating Institution adopts for addressing the conflict (managing, reducing, or eliminating it). The Cooperating Institution will rely on the PTE to report the existence of the conflict to NIH.

COOPERATING INSTITUTION BUSINESS OFFICIAL:

Marisha Moreno, Pre-award Research Administration

Name and Title

3/25/2022

Date

Marisha R. Moreno

Digitally signed by Marisha R. Moreno
Date: 2022.03.25 11:42:43 -04'00'

Signature

STATEMENT OF WORK

Please type or copy and paste the statement of work in the area below.

Statement of Work should be less than 4,000 characters and include only information which may be made publicly available, in order to be used for FFATA reporting.

Statement of Work should contain clear details of what the Cooperating Institution will do in the performance of the project.

A budget, conforming to the requirements of the Sponsor and PTE should also be included at the time of submission.

Tufts University – Scope of Work

- Assist with air quality survey with mobile monitoring platforms to support community projects.
- Assist with set-up and maintenance of monitoring sites, collocation with regulatory sites and side by side tests in the lab
- Assist with data interpretation and quality control
- Assist with troubleshooting of equipment
- Assist with manuscript preparation

Attachment 3B

Research Subaward Agreement Subrecipient Contacts

Subrecipient Information for US Government FFATA reporting

Legal Entity Name: Tufts University

DUNS Number 073134835

Institution Type: Academic (University, College, School)

UEI Number WL9FLBRVPJJ7

Currently registered in SAM.gov: ☒ Yes ☐ No

Exempt from reporting executive compensation: ☒ Yes ☐ No (if no, complete 3Bpg2)

This section for U.S. Entities:

EIN: 42103634

Local County: Middlesex

Congressional District: MA-005

Zip Code+4: 02144-2401

Place of Performance

(Street Address and Country)

200 College Ave.
Medford, MA 02155

Subrecipient Contacts

Central Email: research_noas@tufts.edu

Website: https://viceprovost.tufts.edu/about-rad

Principal Investigator Name: Neelakshi Hudda

Email: neelakshi.hudda@tufts.edu

Telephone Number:

Administrative Contact Name: Dianne Deschenes

Email: dianne.deschenes@tufts.edu

Telephone Number:

Financial Contact Name: Maura Lennon

Email: maura.lennon@tufts.edu

Telephone Number:

Invoice Email: postaward@tufts.edu

Authorized Official Name: Marisha Moreno

Email: marisha.moreno@tufts.edu

Telephone Number:

Legal Address:

Tufts University
Tufts Administrative Building
169 Holland Ave
Medford, MA 02144-2401
United States

Administrative Address (if different from legal address):

Pre-Award Research Administration
Office of the Vice Provost for Research
Tufts University
136 Harrison Ave
Boston, MA 02111-1817
United States

Payment Address (if different from legal address):

Post-Award Research Administration
Finance Division: Office of the Controller
Tufts University
136 Harrison Ave
Boston, MA 02111-1817
United States

Attachment 3B Page 2
Research Subaward Agreement
Highest Compensated Officers

Subrecipient

Entity Name:

Tufts University

PI Name:

Neelakshi Hudda

Highest Compensated Officers

The names and total compensation of the five most highly compensated officers of the entity(ies) must be listed if the entity in the preceding fiscal year received 80 percent or more of its annual gross revenues in Federal awards; and \$25,000,000 or more in annual gross revenues from Federal awards; and the public does not have access to this information about the compensation of the senior executives of the entity through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §§ 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. See FFATA § 2(b)(1) Internal Revenue Code of 1986.

Officer 1 Name:

Officer 1 Compensation:

Officer 2 Name:

Officer 2 Compensation:

Officer 3 Name:

Officer 3 Compensation:

Officer 4 Name:

Officer 4 Compensation:

Officer 5 Name:

Officer 5 Compensation:

	P1(07/01/2022 - 06/30/2023)	P2(07/01/2023 - 06/30/2024)	P3(07/01/2024 - 06/30/2025)	Totals
Personnel				
Salary	\$9,589	\$9,876	\$10,173	\$29,638
Neelakshi Hudda	\$6,600	\$6,788	\$7,002	\$20,400
Graduate Student - 1	\$2,989	\$3,078	\$3,171	\$9,238
Fringe	\$1,988	\$2,048	\$2,109	\$6,145
Calculated Direct Costs	\$0	\$0	\$0	\$0
Personnel Subtotal	\$11,577	\$11,924	\$12,282	\$35,783
Non-personnel				
Travel	\$200	\$200	\$200	\$600
Local (Auto, Bus, Taxi)	\$200	\$200	\$200	\$600
Other Direct	\$500	\$500	\$500	\$1,500
Material, Supplies and Other	\$500	\$500	\$500	\$1,500
Calculated Direct Costs	\$0	\$0	\$0	\$0
Non-personnel Subtotal	\$700	\$700	\$700	\$2,100
Totals				
Total Direct Cost	\$12,277	\$12,624	\$12,982	\$37,883
Total F&A Costs	\$6,875	\$7,070	\$7,270	\$21,214
Totals Subtotal	\$19,152	\$19,694	\$20,252	\$59,097

BUDGET JUSTIFICATION – TUFTS UNIVERSITY

Senior Personnel

The Principal Investigator, Dr. Neelakshi Hudda, will devote .75 calendar months of support in each year. She will be responsible for the overall management of the project. Our budget is based on an annual salary of \$105,768 with a 3% annual escalation rate.

Other Personnel

Support for one summer month of graduate student support in each year of the project. The student will assist with analysis and syntheses of the data and day-to-day organization of the project team meetings.

Fringe Benefits

The University's applicable negotiated fringe benefit rates have been included in the budget:

Faculty – Benefits Eligible: 26.5%

Graduate Student - Summer: 8%

Travel

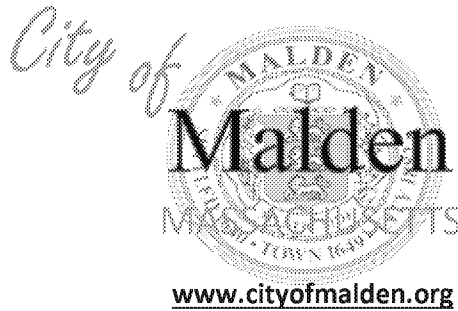
Travel funds of \$200 per year are requested to cover local travel to the project site.

Materials & Supplies

The budget includes \$500 in each year to cover materials and project supplies.

Indirect Costs

Indirect Costs are computed at 56% of modified total direct costs per our current Tufts DHHS rate agreement at the Medford Campus.



Gary Christenson, Mayor

March 22, 2022

Environmental Protection Agency
1200 Pennsylvania NW
Washington DC 20004

**Re: Letter of Partnership on Mystic River Watershed Association application to
EPA-OAR-OAQPS-22-01**

To Whom it May Concern:

On behalf of the City of Malden, I am writing to indicate our enthusiasm and commitment to partnership on the Mystic River Watershed Association application to the Enhanced Air Quality Monitoring for Communities request for proposals. The City of Malden is an Environmental Justice community located in one of the most urbanized portions in all of New England - in the flight path of Logan Airport and impacted by regional truck transportation routes – we recognize this project as an outstanding opportunity to better understand and respond to air quality issues that are impacting the health of our residents.

The City of Malden is making a commitment to playing an active role in interfacing with project partners including the Mystic River Watershed Association, Cambridge Health Alliance, Tufts University, City of Everett and the Community Advisory Board (CAB) toward achieving the goals of the project. In particular, Malden will:

1. Provide feedback on siting the long-term air quality monitoring station;
2. Assist with identifying community members and groups for the CAB;
3. Work with the CAB, Cambridge Health Alliance, and Tufts University on identifying potential 'hotspot' locations for monitoring; and
4. Assist in educating the community on air quality issues and engage in discussions with the CAB on mitigation opportunities in Malden.

This proposal will contribute to both a stronger understanding of regional and local air quality conditions and enhance the ability of the City of Malden to promote a healthy community by forming the analytical basis for future mitigation projects. The City of Malden looks forward to playing an active role in partnership on this air quality grant.

Sincerely,

GARY CHRISTENSON
Mayor, City of Malden

City of Everett Office of the Mayor



Carlo DeMaria, Jr.
MAYOR

Everett City Hall
484 Broadway
Everett, MA 02149-3694
Phone: (617) 394-2270
Fax: (617) 381-1150

March 17, 2022

Patrick Herron, Executive Director
Mystic River Watershed Association
20 Academy St. Suite 306
Arlington, MA 02476

**Re: Letter of Partnership on Mystic River Watershed Association application to
EPA-OAR-OAQPS-22-01**

Dear Patrick,

On behalf of the City of Everett, I am writing to indicate our enthusiasm and commitment to partnership on the Mystic River Watershed Association application to the Enhanced Air Quality Monitoring for Communities RFP.

The City of Everett is an Environmental Justice community impacted by Logan Airport and regional truck transportation routes. We are also a community committed to continued improvements in reducing air quality emissions in our communities – from the implementation of rapid transit bus lanes to bicycle pathways to the electrification of transportation. We recognize this project as an outstanding opportunity to better understand and respond to air quality issues that are impacting the health of our residents.

The City of Everett is making a commitment to playing an active role in interfacing with project partners including the Mystic River Watershed Association, Cambridge Health Alliance, Tufts University, the City of Malden and the Community Advisory Board (CAB) toward achieving the goals of the project. In particular, Everett will:

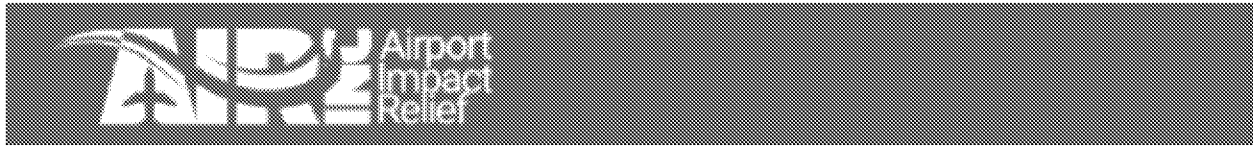
- a) Provide feedback on siting the long-term air quality monitoring station;
- b) Assist with identifying community members and groups for the CAB;
- c) Work with the CAB, Cambridge Health Alliance, and Tufts University on identifying potential 'hotspot' locations for monitoring; and
- d) Assist in educating the community on air quality issues and engage in discussions with the CAB on mitigation opportunities in the City of Everett;

This proposal will contribute to both a stronger understanding of regional and local air quality conditions, and enhance the ability of the City of Everett to promote a healthy community by forming the analytical basis for future mitigation projects.

Sincerely,

A handwritten signature in black ink that reads "Carlo DeMaria". The signature is written in a cursive, flowing style.

Carlo DeMaria
Mayor, City of Everett



Patrick Herron
Executive Director
20 Academy Street, STE 306
Arlington, MA 02476

Dear Patrick,

Airport Impact Relief, Incorporated (AIR, Inc.) is excited to partner with the Mystic River Watershed Association on the EPA's Enhanced Air Quality Monitoring for Communities grant program.

AIR, Inc. is East Boston's longest serving community based environmental non-profit organization. We are led by a community board consisting of local resident activists and supported by an extended network of technical experts in transportation planning, airport management, air quality, community engagement and environmental mitigation advocacy fields.

As a partner in this grant, AIR, Inc. is excited to use our community networks to support the project's monitoring goals through identifying resident hosts, assist in collection of East Boston resident surveys and interviews as needed, provide input into local cultural perspectives on the airport experience, identify East Boston CAB members, and assist in organizing public meetings as needed. We will offer the insights we bring through our 50+ year institutional knowledge of airport operations and our recent experience and learning in local air quality monitoring and engagement, and advocacy for air filtration interventions to advance this team's efforts to produce actionable air quality narratives.

Sincerely,

A handwritten signature in black ink, appearing to read 'C Marchi', is written over a light gray dotted background.

Christopher Marchi
Vice President; Airport Impact Relief, Incorporated (AIR, Inc.)
161 Saratoga Street
East Boston, MA 02128
617-417-2093
cbmarchi@gmail.com



March 13, 2022

Patrick Herron. Executive Director
Mystic River Watershed Association
20 Academy St., Suite 306
Arlington, MA 02476

Dear Mr. Herron

The Somerville Transportation Equity Partnership (STEP) is pleased and looking forward to being a community partner in the Community-Led Improvement of Air Quality and Health in the Lower Mystic (CLENAIR) study proposed to the Environmental Protection Agency. Our commitment to this study builds on STEP's long community-based research participation in the Community Assessment of Freeway Exposures and Health research (cafehresearch.org) on the health effects of traffic related air pollution primarily conducted in Somerville, and Boston Chinatown.

In 2005, STEP was the prime motivator for the first CAFEH research grant and has participated in many related joint projects since then. Our goal has been to understand the impact of mobile sources of pollution on the health of people living near heavily trafficked roadways and to test ways to reduce exposures. Inevitably, when we discuss research on the health effects of near-roadway pollution with residents and elected officials, the first question asked is, "What can we do about it?" Like Somerville, our neighboring communities of Charlestown, Everett, Chelsea, Malden, East Boston are overburdened by air pollution from excessive traffic and aviation sources due to their proximity to Logan Airport.

We plan to participate actively in this research because it is critically important to document the health effects, identify effective ways to reduce exposure and educate community residents on how to reduce their exposure to these pollutants.

STEP's involvement in CLENAIR will rely on the participation of Mr. Wig Zamore and Dr. Ellin Reisner as consultants to the project. Mr. Zamore will bring his technical knowledge of the science, which is considerable, and decades of experience in various roles serving Somerville and the greater Boston region, with particular focus on integration of land use, transportation, environment and health. Dr. Reisner will work with community project leaders on engagement and community education based on her extensive community engagement addressing traffic related air pollution (TRAP) and increasing access to public transportation.

STEP will be a sub-contractor for this study. Mr. Zamore and Dr. Reisner will attend project planning meetings, and support local outreach efforts as well as contributing substantively to study design and preparation of study reports and publications.

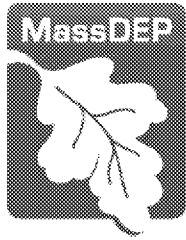
Our organization is a 501C3 non-profit organization of concerned residents advocating for greatly needed transportation and air quality improvements for Somerville Massachusetts. Since our founding

in 2003 our mission is to secure transportation for the city that will increase social equity, environmental health, and economic opportunity and reduce traffic volumes in the community.

Sincerely yours,

A handwritten signature in cursive script that reads "Ellin Reisner". The ink is dark and the signature is fluid.

Ellin Reisner, President



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

William X. Wall Experiment Station • 37 Shattuck Street, Lawrence MA 01843 • 978-682-5237

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March 24, 2022

Patrick Herron, Executive Director
Mystic River Watershed Association
20 Academy St. Suite 306
Arlington, MA 02476

Re: Letter of Partnership on Mystic River Watershed Association application EPA-OAR-OAQPS-22-01

Dear Patrick,

On behalf of the Massachusetts Department of Environmental Protection (MassDEP), I am writing to indicate our enthusiasm and commitment to partnership on the Mystic River Watershed Association (MyRWA) and Tufts University application to the Enhanced Air Quality Monitoring for Communities RFP.

As we understand the project, MyRWA will monitor transportation-related air pollutant impacts at priority locations in communities in the Lower Mystic area of greater Boston. This proposal will contribute to both a stronger understanding of regional and local air quality conditions, and will promote healthy communities.

MassDEP is excited to support the co-location of PM_{2.5} monitors being used in this project with our FRM PM_{2.5} monitor in Chelsea (Chelsea Highland Park site) for the purpose of calibration and quality assurance. We expect to be in dialogue on this project with project partners led by MyRWA.

Sincerely,

Sean Dunn, Deputy Division Director
MassDEP Air Assessment Branch

DAVID T QUEELEY

Ex. 6 Personal Privacy (PP)

BACKGROUND

Accomplished, creative urban sustainability and community engagement professional and leader; focus on supporting underserved populations; certified green infrastructure trainer; focus on partnerships while prioritizing the environment and public engagement; work with residents, individuals, communities, universities, NGO's, government and municipal agencies to bridge training, policy and practice gaps; perform foundation and individual fundraising; dynamic university and public speaker

SELECTED RELEVANT EXPERIENCE

Director for Programs, Mystic River Watershed Association; Arlington, MA

03/2022 – Present

Oversee MyRWA's programs, initiatives, and related community engagement throughout MyRWA's 21 community watershed, with a focus on communities of the Lower Mystic basin.

Director of Eco-Innovation, Codman Square Neighborhood Development Corp; Dorchester, MA

05/2013 – 01/2022

Provide vision, manage, oversee, and implement Boston's first neighborhood scale Eco-Innovation District; partner with local residents, city officials, and national organizations in support; researched, created and tracked metrics regarding neighborhood improvements in health, clean energy use and cost

Director, Parks for People The Trust for Public Land, Boston, MA

01/2004 - 01/2009

Director for New England -wide regional program; coordinated programmatic activities with New England State Directors; managed programmatic budget of \$1.8 million; provided strategic leadership, visioning, and direction for iconic, urban, multi-state program; oversaw three staff and interns; grew and managed Advisory Board and secured programmatic funding; partnered with state and city officials, local residents and NGOs to further open space goals; provided innovative maintenance funding models; provided vision, coordination with local partners, successfully solicited funding to enable the creation of a playground in Boston, MA; completed comprehensive park assessment for City of Hartford, CT. • Doubled size of board from six to 12 people and increased board giving to 100%.

Senior Planner; Exec Office of Environmental Affairs, Metropolitan District Comm, Boston, MA

01/1988 - 01/1997

Managed budget of \$375,000 and oversaw consultants; coordinated Commission's activities with federal, state, and local, Agencies and non-profit groups; represented agency at Environmental Diversity Forum; managed conversion of a 75-acre landfill and adjacent abandoned railway into public park land, bicycle path and open space in Dorchester Shores and Neponset River Reservations; wrote successful \$1.1 million ISTE grant to fund initial bikeway work.

Self-Help Grant Program Manager, Commonwealth of MA, Boston, MA

01/1986 - 01/1988

Managed statewide Urban Self-Help program which disbursed \$10 million yearly in grant funds to municipalities for conservation and recreation programs; recommended changes in city open space plans and coordinated changes with communities; coordinated field staff for project review.

EDUCATION

BA, English, Wesleyan University, Middletown, CT 1980

Completed course work toward MA in City and Regional Planning, Cornell University, 1996

CERTIFICATIONS

Green Infrastructure Instructor and Practitioner (GIP); National Green Infrastructure Certification Program, Envirocert International

Clean Water Certificate Certified Trainer; Center for Watershed Protection

ADDITIONAL INFORMATION

Associate Park Commissioner, City of Boston; Awarded John O'Connor Award for Grassroots Leadership, October 2015, City of Boston; GoBoston 2030 Advisory Board, City of Boston; University and College Lecturer: Yale University, Boston College, Northeastern University, Boston University

Andrew Hrycyna

Ex. 6 Personal Privacy (PP)

Skills

- Data analysis and visualization with Excel, SPSS, Tableau, Microsoft Access, R, Python
- ArcGIS and other mapping tools
- Translating ideas in environmental science for a wide audience
- Writing, editing, and publications production

Education

Sustainability and Environmental Management, Harvard University Extension School, 2011- Candidate, Master of Liberal Arts (ALM) in Extension Studies, ecological management. Degree expected 2015. Thesis: Contaminated Sediments of the Mystic River Watershed.

University of Michigan, 1984-87, M.A. in philosophy 1988.

Harvard University, 1980-1984, B.A., magna cum laude, in philosophy.

Work

Watershed Scientist, Mystic River Watershed Association, April 2014- present.

Coordinate and manage water quality monitoring program under direction of Water Quality Monitoring Director. Organize and train volunteers, manage sampling logistics, manage database of baseline and outfall data, work with labs, supervise interns, help write reports, and perform field and data work as necessary.

Water Chestnut Project Coordinator, Mystic River Watershed Association, Feb-Aug 2013

Paid internship to organize and coordinate the organization's efforts to manage water chestnut on the Mystic River. Organized corporate and community volunteer days. Managed events totaling nearly 400 people in canoes over 10 events in July and August. Supervised interns. Created promotional materials and reports.

Malden River Database Internship, Mystic River Watershed Association, Fall 2012

Designed and built database in MS Access of soil, groundwater, and sediment contaminants in Malden River. Worked with other intern under supervision of Water Quality Monitoring Director to gather, organize, and map data from state, USGS, and other data sources.

Freelance editor, 2011-2014

Continuing editorial work as described below, on a project-by-project basis.

Acquisitions editor, manuscript editor, and writer, freelance, 2000-2011

Worked as freelance Education Editor for Beacon Press for 10 years, responsible for finding, signing up, editing, and supporting authors for a serious non-fiction list in education. Involved in all aspects of book publication, from contract to marketing. Reported to the Director. In 2006, helped

establish the annual Simmons College/Beacon Press Lecture and Book Series on Race, Education, and Democracy. Other editorial clients included academics, Harvard Graduate School of Education, and others. Writing appeared in *Boston Review* and the *Harvard Education Letter*.

Editor and Publications Manager, Harvard Graduate School of Education, 1997-2000

Ran publications department with three employees. Reported to Director of Communications. Published newsletters, brochures, catalog, and an alumni magazine, *The Harvard Education Bulletin*. Re-imagined and redesigned the magazine, which won editorial awards in its new design from the Council for Advancement and Support of Education (CASE).

Editor, Beacon Press, 1995-1997

Sought out and convinced authors to sign contracts for books in education, politics, and literary non-fiction. Engaged in all aspects of book production.

Associate Editor, Assistant Editor and Editorial Assistant, Beacon Press, 1989-1995

Rare Book Cataloger, Harvard University, Houghton Rare Book Library, 1987-1989.

Teaching Fellow, University of Michigan, 1984-1987

Talks and articles on ecology and the environment

- Mapping a Legacy of Pollution: Contaminated Sediments of the Mystic River Watershed. Harvard GIS Institute, Center for Geographic Analysis. January 2014.
- Strohbach, M. W., Hrycyna, A., & Warren, P. (2014, forthcoming). 150 years of changes in bird life in Cambridge, Massachusetts from 1860-2012. *Wilson Journal of Ornithology*.
- "Exploring the World through Black's Nook: An Experiment in Collaborative Patch Birding in Cambridge, Massachusetts." *Bird Observer* 41:3, June 2013.
- Black's Nook Avian Biodiversity Project. January 2012. Water Dept., Cambridge, MA.
- What the eBird Database Can Tell Us about Fresh Pond. March 2012. Maynard Ecology Center, Fresh Pond Reservation, Cambridge, MA.

Projects

- Black's Nook Avian Biodiversity Project, organizer. Maintain mailing list and website, publish results and updates for the public, maintain collaboration with Cornell University's eBird database managers. Started February 2012. Ongoing.
- Checklist of Birds of Fresh Pond Reservation, editor, drawing from eBird database at Cornell University. Published March 2012. Bi-weekly eBird updates for Fresh Pond.
- Boston Metro Area-Urban Long Term Research Area project, field observer, 2010-2012, lab of Paige Warren, Department of Environmental Conservation, UMass Amherst.

Boards

Chair, Board of Trustees, 2005-11, 2012-13, Harvard Yard Child Care Center, Inc. Led process of incorporation in 2006, and Director hiring in 2013. Led the Board in overseeing budget process, investments, committees, Director review and compensation, and relationship with Harvard.

Other Board roles, Harvard Extension Environmental Club (2013), Cambridgeport PTO (2004-11)

Daria Clark (she/her)

Passionate conservationist devoted to the preservation of natural resources through ecological restoration, environmental education, public outreach, and increasing accessibility to natural spaces

- 4+ years professional experience using multi-modal communication to engage diverse audiences with environmental issues
- 1.5 years professional experience coordinating habitat restoration volunteer events and training the next generation of environmental stewards

Work Experience

Engagement Manager

Mystic River Watershed Association (MyRWA) | 06.2021 - Present

- Managing outreach and communications to engage people with the watershed and MyRWA projects
- Coordinating and leading volunteer environmental stewardship programs to increase awareness of local environmental issues and work towards a vibrant, healthy, and resilient Mystic River watershed

Fellow

Tufts Institute of the Environment | 04.2020 - 05.2021

- Conducted interdisciplinary research to investigate the direct and indirect effects of climate change on local tide pool species
- Presented research to a variety of audiences including biology classes, conferences, and public presentations

Teaching Assistant

Biology Department, Tufts University | 09.2019 - 05.2021

- Assisted with two lecture courses (Marine Biology and Evolution in Our World) and two lab courses (Cells & Organisms and Organisms & Populations)
- Managed course websites, discussion boards, and email communication

Restoration Specialist

Grassroots Ecology | 05.2018 - 12.2018

- Communicated restoration and education work via newsletter articles and grant reports
- Coordinated and carried out volunteer environmental stewardship programs

Conservation Education Research Assistant

Daily Ecology Lab, Stanford University | 12.2017 - 05.2018

- Investigated how zoos develop their visitors' sense of place and desire to pursue pro-conservation behaviors using QGIS and survey data

Academic History

M.S. Biology

Tufts University | Expected Graduation: May 2021 | GPA: 4.00

Focus: Ecology and conservation biology in marine ecosystems

- Website Committee, Biology Union of Graduate Students
- Member, Ecology Reading Group
- Awarded "Outstanding Graduate Contribution to Mentoring or Teaching Undergraduates" by the Graduate Student Council

B.S. Biology with Minor in Education

Stanford University | 09.2014 - 03.2018 | GPA: 3.82

- Outreach, Stanford Meatless Monday Campaign
- Member, Stanford Women's Club Volleyball
- Resident Assistant for Freshmen (community building and event planning)

Contact



Ex. 6 Personal Privacy (PP)

Skills

- Project Management
- Volunteer Management
- Environmental Education & Outreach
- Website Design
- Public Speaking & Presentations
- Science Communication
- Data Analytics & Visualization
- Collaboration
- Multi-tasking

Tools

- Wordpress
- Wix
- Squarespace
- Eventbrite
- Facebook
- Twitter
- Instagram
- Microsoft Office Suite
- Canva
- Zoom
- Keynote
- QGIS
- R/R Studio
- Google Workspace
- Bloomerang

Websites

Tufts Biology Union of Graduate Students (BUGS)

<https://sites.tufts.edu/bugs/>

Personal Travel Blog

<https://dariacClark7.wixsite.com/southamericatrip>

Antiracist Teaching Resources for Biology Teaching Assistants (in progress)

Languages Spoken

English: Fluent

Spanish: Working Proficiency

Hobbies



Photography



Hiking



Cooking

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Hudda, Neelakshi

eRA COMMONS USER NAME (credential, e.g., agency login): NEELAKSHIHUDDA

POSITION TITLE: Research Assistant Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
Indian Institute of Technology, Varanasi, India	BS	05/06	Civil Engineering
USC, Los Angeles, CA	MS	12/07	Civil and Environmental Engineering
USC, Los Angeles, CA	PhD	05/12	Civil and Environmental Engineering

A. Personal Statement

I am a Research Assistant Professor at Tufts University in the School of Engineering. My main area of research is urban air pollution with a focus on ultrafine particles of transportation origin. I have a expertise in deployment and development of stationary and mobile monitoring technology to study spatial and temporal patterns of air pollutants. Of relevance to the proposed work is my previous work on advancing the understanding of the impacts of aviation emission on ultrafine concentration in communities downwind of airports in Los Angeles and Boston. For the past 1.5 years I have served as an investigator for Tufts on the ASCENT 18 project subaward from Boston University (Lane, PI). This project has involved characterization of aviation-related air pollution at ground level in near-airport communities. My successful involvement in this project as well as the previous studies in prior and ongoing research projects (summarized below), as evidenced by productive collaboration with Dr. Durant, qualifies me to serve as an Investigator for Tufts on the proposed study.

B. Positions and Employment

2018-present Research Assistant Professor, Department of Civil and Environmental Engineering, Tufts University, Medford, MA
 2017 Postdoctoral Research Associate, Department of Civil and Environmental Engineering, Tufts University, Medford, MA
 2012-2016 Postdoctoral Research Associate, Department of Preventive Medicine, University of Southern California, Los Angeles, CA

C. Contributions to Science**1. Discovering the large spatial extent of the airport-related emissions on ultrafine particles and association with health effects.**

I discovered the large spatial extent of the impacts of aviation and airport-activities on the concentrations of ultrafine particles downwind of the airport and the intrusion of these particles into the indoor environment. Before our report, the farthest that the impacts had been studied was up to a few kilometers and we measured these impacts up to 20 km downwind in Los Angeles and 7.3 km in Boston.

- a. Wing, S. E.; Larson, T. V.; **Hudda, N.**; Boonyarattaphan, S.; Fruin, S.; Ritz, B. Preterm Birth among Infants Exposed to in Utero Ultrafine Particles from Aircraft Emissions. *Environ. Health Perspect.* 2020, 128 (4), 047002.
- b. **Hudda, N.**, Simon, M.C., Zamore, W. & Durant, J.L. (2018) Aviation-Related Impacts on Ultrafine Particle Number Concentrations Outside and Inside Residences near an Airport. *Environ. Sci. Technol.* 52 (4), 1765-1772.

- c. **Hudda, N.** & Fruin, S. (2016) International Airport Impacts to Air Quality: Size and Related Properties of Large Increases in Ultrafine Particle Number Concentrations. *Environ. Sci. Technol.* 50 (7), 3362- 3370.
- d. **Hudda, N.**, Gould, T., Hartin, K., Larson, T. V. & Fruin, S. A. (2014) Emissions from an international airport increase particle number concentrations 4-fold at 10 km downwind. *Environ. Sci. Technol.* 48 (12), 6628-6635.

2. Understanding of intrusion of transportation-related air-pollution in indoor-environments and mitigation and association with health effects

Currently, I am studying the effects of HEPA filtration on short-term effects on blood pressure and efficacy of HEPA filters in near-highway homes. Further, through assessment of the impacts of intrusion of outdoor air pollution on indoor concentrations and through modeling of ambient/outdoor pollution, I have contributed to the enhancement of understanding transportation-related air-pollution impacts on indoor air quality.

- a. **Hudda, N.**; Eliasziw, M.; Hersey, S.; Reisner, E.; Brook, R.D.; Zamore, W. ; Durant, J.L.; Brugge, D. The effect of reducing ambient traffic-related air pollution on blood pressure: A randomized crossover trial. *Hypertension*. 2021;77:00-00.
- b. **Hudda, N.**; Durant, L. W.; Fruin, S. A.; Durant, J. L. Impacts of Aviation Emissions on Near-Airport Residential Air Quality. *Environ. Sci. Technol.* 2020, 54 (14), 8580–8588.
- c. Brugge, D., Simon, M.C., **Hudda, N.**, Zellmer, M., Corlin, L., Cleland, S., Lu, E.Y., Rivera, S., Byrne, M., Chung, M., Durant, J.L. (2017) Lessons from in-home air filtration intervention trials to reduce urban ultrafine particle number concentrations. *Build Environ.*, 126, 266-275.
- d. Simon, M.C., **Hudda, N.**, Naumova, E.N., Levy, J.I., Brugge, D., Durant, J.L. (2017) Comparisons of Traffic-Related Ultrafine Particle Number Concentrations Measured in Two Urban Areas by Central, Residential, and Mobile Monitoring. *Atmos Environ.*, 169, 113-127.

3. Understanding of spatial variation of particulate air pollution in urban environment

Through the research listed below that ranges from the impact of noise-barrier to intra- and inter-community variability (including ultrafine particles, I have contributed to the enhancement of understanding particulate air-pollution impacts in urban environments.

- a. Ning, Z., **Hudda, N.**, Daher, N., Kam, W., Herner, J., Kozawa, K., et al. (2010). Impact of roadside noise barriers on particle size distributions and pollutants concentrations near freeways. *Atmospheric Environment*, 44 (26), 3118-3127
- b. **Hudda N.**, Cheung K., Moore K. F. & Sioutas C. (2010). Inter-community variability in total particle number concentrations in the eastern Los Angeles air basin. *Atm.Chem.Physics*, 10 (23), 11385-11399.
- c. Moore, K., Krudysz, M., Pakbin, P., **Hudda, N.** & Sioutas, C. (2009). Intra-Community Variability in Total Particle Number Concentrations in the San Pedro Harbor Area (Los Angeles, California). *Aerosol Science and Technology*, 43 (6), 587-603.

Complete List of Published Work in My Bibliography: <https://www.ncbi.nlm.nih.gov/pubmed/?term=hudda+n>

D. Ongoing Research Support

MAHHU0044-18 Durant (PI) 01/02/19 – 01/01/23

Sustainable Air Quality in Affordable Housing. To measure the air quality and comfort of study participants living in affordable housing in Somerville, MA, based on air filtration, ventilation rates, and air recirculation rates. Role: Co-Investigator

R01 ES030289 Brugge (PI) 9/1/2019 – 5/31/2024

Home Air Filtration of Traffic-Related Air Pollution. To measure the impacts of HEPA filtration on cardiovascular health in residents of housing near major roadways. Role: Co-Investigator

13-C-AJFE-BU-020 Lane (PI) 2/1/2020 – 2/3/2023

Community Measurements of Aviation Emissions Contribution to Ambient Air Quality. To measure ground level impacts of aviation emissions in near-airport communities. Role: Investigator

John L. Durant, PhD, P.E.

Personal Statement

For the proposed project I will advise on study design, pollutant monitoring issues, data quality and reporting. I have been performing urban-scale air pollution research for the past 25 years. My primary area of expertise is in measurement and modeling of air pollutants with applications in basic science, environmental engineering, epidemiology, toxicology, public health, and factors influencing exposure and exposure mitigation. I have served as PI/co-PI/I on studies funded by NIAID, NIEHS, HUD, FAA, and EPA. I am currently the PI on a HUD-funded study of air quality in affordable housing near busy roadways in Somerville, Massachusetts. I have been working with Dr. Hudda since 2014 on a variety of urban air quality monitoring projects including characterization of aviation-related air pollution at ground level in near-airport communities. I have worked successfully with Patrick Herron on several water quality projects in the Mystic Watershed.

Positions and Employment

1993–1995	Postdoctoral Associate, Center for Environmental Health Sciences, MIT, Cambridge, MA
1995–2001	Assistant Professor, Department of Civil and Environmental Engineering, Tufts University School of Engineering, Medford, MA
2001–2020	Associate Professor, Department of Civil and Environmental Engineering, Tufts University School of Engineering, Medford, MA
2020-present	Professor, Department of Civil and Environmental Engineering, Tufts University School of Engineering, Medford, MA
2011	Visiting Research Scientist, Institute for Risk Assessment Sciences, University of Utrecht, Utrecht, The Netherlands

Contribution to Science

1. Assessing exposure to ultrafine particles for people living near highways and major roadways

- a. Patton AP, Zamore W, Naumova EN, Levy JI, Brugge D, **Durant JL**. Transferability and Generalizability of Regression Models of Ultrafine Particles in Urban Neighborhoods in the Boston Area. *Environmental Science and Technology*, 2015; 49(10): 6051–6060, DOI: 10.1021/es5061676, PMC4440409.
- b. Simon MC, Hudda N, Naumova E, Levy JI, Brugge D, **Durant JL**. Comparisons of traffic-related ultrafine particle concentrations measured in two urban areas by central, residential, and mobile monitoring, *Atmospheric Environment*, 2017, 169, 113-127; DOI: 10.1016/j.atmosenv.2017.09.003.
- c. Simon MC, Patton AP, Naumova E, Levy JI, Brugge D, **Durant JL**. Combining measurements from mobile monitoring and a reference site to develop models of ambient ultrafine particle number concentration at residences, *Environmental Science & Technology*, 2018, 52(12), 6985–6995, DOI: 10.1021/acs.est.8b00292.
- d. Hudda N, Simon MC, Patton AP, **Durant, JL**, Air quality improvements in a near-highway urban neighborhood during the COVID-19 pandemic, *Science of the Total Environment*, <https://doi.org/10.1016/j.scitotenv.2020.140931>.
- e. Wright RJ, Hsu H-HL, Chiu Y-HM, Coull BA, Simon MC, Hudda N, Schwartz J, Kloog I, **Durant JL**, “Prenatal ambient ultrafine particle exposure and childhood asthma in the northeastern United States”, *Am J Respir Crit Care Med*, May 2021.

2. Health effects of traffic-related air pollution: ultrafine particles and cardiovascular disease

- a. Lane, KJ, Levy JI, Scammell MK, Patton AP, **Durant JL**, Zamore W, Mwamburi M, Brugge D, Effect of time-activity adjustment on exposure assessment for traffic-related ultrafine particles, *Journal of Exposure Science and Environmental Epidemiology*, 1 April 2015; doi:10.1038/jes.2015.11. PMC4542140.

- b. Lane KJ, Scammell MK, Levy JI, Peters JL, Patton AP, **Durant JL**, Reisner E, Mwamburi MM, Zamore W, Brugge D. Long-term exposure to near-highway ultrafine particles is associated with biomarkers of cardiovascular disease risk, *Environment International*, 2016, 92-93: 173-182. PMC27107222.
- c. Corlin L, Woodin M, Hart J, Simon MC, Gute DM, Stowell J, Tucker K, **Durant JL**, Brugge D. Longitudinal associations between exposure to ultrafine particulate matter and changes in biomarkers of cardiovascular disease risk factors in Puerto Rican adults, *Environmental Health*, 2018, 17:33, <https://doi.org/10.1186/s12940-018-0379-9>.
- d. Hudda N, Eliasziw M, Hersey S, Reisner E, Brook RD, **Durant JL**, Zamore W, Brugge D, A randomized crossover trial assessing the effect of reducing ambient traffic-related air pollution on acute changes in blood pressure, *Hypertension*, 2021;77:00–00. DOI: 10.1161/HYPERTENSIONAHA.120.15580.

3. Reducing exposure to traffic-related air pollution in homes and in the community

- a. Padró-Martínez LT, Owusu E, Reisner E, Zamore W, Simon MC, Brown CA, Chung M, Mwamburi M, Brugge D, **Durant JL**. A randomized cross-over air filtration intervention trial for reducing cardiovascular health risks in residents of public housing near a highway, *International Journal of Environmental Research and Public Health*, 2015, 12: 7814-7838. PMC4515693.
- b. Brugge D, Patton AP, Bob A, Reisner E, Lowe L, Bright O-JM, **Durant JL**, Newman J, Zamore W. Developing policy and practice to reduce traffic-related air pollution exposure. *Environmental Justice*, 2015; 8:95-104.
- c. Brugge D, Simon MC, Hudda N, Zellmer M, Corlin L, Cleland S, Lu EY, Rivera S, Byrne M, Chung M, **Durant JL**. Lessons from in-home air filtration intervention trials to reduce urban ultrafine particle number concentrations. *Building and Environment*, 2017, 126:266–275.
- d. Hudda N, Simon MC, Patton AP, **Durant JL**, Air quality improvements in a near-highway urban neighborhood during the COVID-19 pandemic, *Science of the Total Environment*, <https://doi.org/10.1016/j.scitotenv.2020.140931>.

4. Assessing exposure to aviation emissions for people living near airports

- a. Hudda N, Simon MC, Zamore W, Brugge D, **Durant JL**. Aviation emissions impact on ambient ultrafine particle concentrations in the greater Boston area, *Environmental Science & Technology*, 2016, DOI:10.1021/acs.est.6b01815.
- b. Hudda N, Simon MC, Zamore W, **Durant JL**. Aviation-related impacts on ultrafine particle number concentrations outside and inside residences near an airport, *Environmental Science & Technology*, 2018, 52, 1765-1772, DOI: 10.1021/acs.est.7b05593. [Selected as Editor's Choice as Best Paper of the Month].
- c. Hudda N, Durant LW, Fruin S, **Durant JL**, "Infiltration of aviation-related ultrafine particles inside a residence near an airport," *Environmental Science & Technology*, <https://dx.doi.org/10.1021/acs.est.0c01859>.

Complete List of Published Work in My Bibliography: <http://www.ncbi.nlm.nih.gov/pubmed/?term=durant+john>

Ongoing Research Support

MAHHU0044-18	Durant (PI)	1/2/19 – 1/1/2023
Sustainable Air Quality in Affordable Housing. To measure air quality and comfort of participants living in affordable housing in Somerville, MA, based on air filtration, ventilation rates, and air recirculation rates.		
R01 ES030289	Brugge (PI)	9/1/2019 – 5/31/2024
Home Air Filtration of Traffic-Related Air Pollution. To measure the impacts of HEPA filtration on cardiovascular health in residents of housing near major roadways. Role: Co-I		
13-C-AJFE-BU-020	Lane (PI)	2/1/2020 – 1/31/2023
Community Measurements of Aviation Emissions Contribution to Ambient Air Quality. To measure ground level impacts of aviation emissions in near-airport communities. Role: Tufts PI		

Greer A. Hamilton

Boston University School of Social Work

Ex. 6 Personal Privacy (PP)

EDUCATION

Doctor of Philosophy in Social Work

Boston University School of Social Work

Currently enrolled (expected May 2024)

Dissertation (In Progress): On Belonging: An exploration into how neighborhood change is embodied by residents of Buffalo, New York

Dual Degree: Bachelor of Arts in Health and Human Services and Master of Social Work

University at Buffalo, State University of New York

May 2016

Research interests: Racial justice, urban governance, community engagement, community-engaged research, community and economic development, arts-based methods, placemaking, place keeping, critical race theory, and Black feminism.

ACADEMIC AFFILIATIONS

2020-present Affiliate, Boston University Center for Antiracist Research

AWARDS AND FELLOWSHIPS

2021 Association for Community Organization and Social Action (ACOSA) Doctoral Student Award.

2020 Public Policy Fellow (\$7,000), Harvard Kennedy School Rappaport Institute for Greater Boston:
Fellowship placement with MassDevelopment Transformative Development Initiative (TDI) Program.

FUNDED RESEARCH

July 2021-present Supplement Candidate, NIDA Diversity Supplement Project on Municipal Drug Policy. HEALing Communities Study (HCS-MA), Massachusetts. National Institute of Health and Substance Abuse Mental Health Administration. PI: Jeffrey Samet, \$135,600.

April 2021-August 2021 Research Assistant, Using Community Storytelling to Understand Vaccine Hesitancy in Black, Indigenous, and People of Color (BIPOC) Communities. Boston University CTSI Community Engagement Program. PI: Katherine Gergen-Barnett, \$100,000.

October 2020- present Doctoral Research Assistant, Boston University Diversity & Inclusion Process Evaluation for the Office of the Vice President and Associate Vice Provost for Community & Inclusion, Crystal Williams.

June 2020-present Research Assistant, Sustainable Air Quality in Affordable Housing (SAQIAH). Department of Housing and Urban Development. PI: John Durant.

September 2019-present Doctoral Research Assistant, HEALing Communities Study (HCS-MA), Massachusetts. National Institute of Health and Substance Abuse Mental Health Administration. PI: Jeffrey Samet, \$89,000,000.

Revised December 2021

PUBLICATIONS

Peer-Reviewed Journal Articles

1. Chatterjee, A., Glasgow, L., Bullard, M., Sabir, M., **Hamilton, G.A.**, Chassler, D., Stevens-Watkins, D. J., Walters, S. T., Goddard-Eckrich, D., Rodgers, E., Chaya, J., Rodriguez, S., Gutnick, D., Oga, E., Salsberry, P., Sprague Martinez, L. (2022). Racism and the Opioid Epidemic Can we avoid repeating historical mistakes? *The American Journal of Public Health*, 112, 204-208. <https://doi.org/10.2105/AJPH.2021.306572>
2. Sprague Martinez L., Rapkin, B., Young, A., Freisthler, B., Glasgow, L., Hunt, T., Salsberry, P., Oga, E., Bennet-Fallin, A., Plouk, I., Drainoni, M., Freeman, P., Surratt, H., Gulley, J., **Hamilton, G.**, Bowman, P., El-Bassel, N., Battaglia, T. (2020). Community engagement to implement evidence-based practices in the HEALing communities study. *Drug and Alcohol Dependence*, 217. <https://doi.org/10.1016/j.drugalcdep.2020.108326>
3. Ely, G. E., Hales, T. W., Jackson, D. L., Maguin, G., & **Hamilton, G.** (2017a). The undue burden of paying for abortion: An examination of abortion fund cases. *Social Work in Health Care*, 56(2), 99-114.
4. Ely, G. E., Hales, T. W., Jackson, D. L., Maguin, G., & **Hamilton, G.** (2017b). Where are they from and how far must they go? Examining location and travel distance in U.S. abortion fund patients. *International Journal of Sexual Health*, 29(4), 313-324. doi.org/10.1080/19317611.2017.1316809
5. Ely, G. E., Hales, T.W., Jackson, D. L., Bowen, E. A., Maguin, E. & **Hamilton, G.** (2017c). A trauma- informed examination of the hardships experienced by abortion fund patients. *Health Care for Women International*, 38(11), 1133-1151. [doi:10.1080/07399332.2017.1367795](https://doi.org/10.1080/07399332.2017.1367795)
6. Ely, G. E., Hales, T. W., Jackson, D. L., Maguin, G., & **Hamilton, G.** (2016). Poverty and the art of financing abortion: and exploration of abortion funding assistance cases in the United States. *Contraception*, 94(4), 397. <https://doi.org/10.1016/j.contraception.2016.07.057>

Educational Courses

1. Belkin-Martinez, D., **Hamilton, G.A.**, & Toraif, N. (2021). *Understanding Structural and Institutional Racism: An Introduction*. Boston University School of Social Work. Original course developers. <https://thenetwork.bu.edu/offering/understanding-structural-institutional-racism/>

Reports

1. **Hamilton, G. A.** (2020). *Transformative Development Initiative Inclusive Leadership Framework*. MassDevelopment's Transformative Development Initiative. Unpublished Report.
2. **Hamilton, G.A.** (2020). *Black Massachusetts Coalition Blueprint Report Objectives*. Black Economic Council of Massachusetts. Unpublished Report.
3. **Hamilton, G.A.** (2020). *Black Massachusetts Coalition Action Plan Framework*. Black Economic Council of Massachusetts. Unpublished Report.

SERVICE TO THE SCHOOL AND UNIVERSITY

2022- present	Boston University School of Social Work, MSW application review
2020-present	Boston University School of Social Work, Member, Equity & Inclusion Committee
2020- 2021	Boston University, Provost's Grad Student Advisory Board, School of Social Work PhD representative

SERVICE TO THE PROFESSION

2021-present	Society for Social Work and Research Doctoral Student Committee, Conference Sub-Committee Member
2021-present	Society for the Study of Social Problems, Membership and Outreach Committee: Graduate Student Representative
2021-present	Society for the Study of Social Problems, Co-Chair, Division of Sociology and Social Welfare

SERVICE TO THE PUBLIC

2021- present	Eastern Massachusetts Abortion Access Fund, Board of Director
2020-2021	Boston Women's Fund, Allocations Committee Member

Adrianna Spindle-Jackson, LMSW

Ex. 6 Personal Privacy (PP)

Research Interests: My research aims are rooted in promoting social and economic justice for historically marginalized groups. I use quantitative and qualitative methods to examine housing policies, pathways and assistance, and experiences of gentrification, displacement (physical and cultural), and homelessness, with an ultimate goal of informing policy to positively effect change.

Education

PhD Candidate	Boston University School of Social Work. Expected Graduation May 2024
Master of Social Work	University of Michigan, Ann Arbor. December, 2016 Concentration: Interpersonal Practice, Mental Health Specialized Program: Detroit Integrated Health Scholars
Bachelor of Science	California State University, Monterey Bay. May, 2013 Major: Psychology Capstone Research Project: Biracial Identity: Stories of Resistance from the “Outsiders Within”

Publications

Published

Collins, M.E., **Spindle-Jackson, A.**, & Yao, M. (2021). Workforce development systems effort for system-involved youth: Opportunities and challenges. *Children and Youth Services Review*. <https://doi.org/10.1016/j.childyouth.2021.106158>

Under Review

Collins, M.E., Kukyendall, S., Ramirez, M., **Spindle-Jackson, A.** (2021). COVID Impacts on U.S. Youth Workforce System: Challenges and Opportunities

Spindle-Jackson, A., Kukyendall, S., Ramirez, M., Collins, M.E. (2021). Centering Race Equity Within Youth Workforce Development: Utilizing Critical Race Theory

Fellowships

2021-Present	Boston University Hariri Institute for Computing Graduate Student Fellow (\$5,000)
Summer 2021	Public Policy Fellow (\$8,000), Harvard Kennedy School Rappaport Institute for Greater Boston: Fellowship Placement in State Representative Natalie Higgins’ Office.

Experience

Research

2020-Present	<i>Graduate Research Assistant: Quantitative methods</i> Boston, MA Examining the Impact of Foster Care Age Extension on Rates of Youth
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	Homelessness Supervisor: Thomas Byrne, Ph.D.
2020-Present	<i>Graduate Research Assistant: Quantitative methods</i> Boston, MA Examining Healthcare Cost Trajectories for Homeless Older Adults Supervisor: Thomas Byrne, Ph.D.
2020-Present	<i>Graduate Research Assistant: Qualitative methods</i> Boston, MA Addressing the Workforce Needs of Youth in Urban Settings: A Study of Local Workforce Development Boards' Inclusion of Youth Expertise P.I.: Mary Elizabeth Collins, A.M., Ph.D.
2020-Present	<i>Graduate Research Assistant: Qualitative methods</i> Boston, MA Understanding Implementation Processes to Effectively Serve Youth P.I.: Mary Elizabeth Collins, A.M., Ph.D.
2019-2020	<i>Graduate Research Assistant: Qualitative and participatory methods</i> Boston, MA Social Mobility and Research Training (SMART) Project P.I.: Astraea Augsberger, Ph.D.
<i>Professional</i> 2021-2021	<i>Executive Report Writer and Contributor</i> Urban Land Institute Virtual Advisory Service Panel (vASP) Vancouver, BC: Housing and Employment
2020-2021	<i>Qualitative Interviewer</i> Urban Land Institute Project: Initiative on Homelessness Boston, MA

Presentations

Conference Presentations

Spindle-Jackson, A., & Collins, M.E. (2022) "Complexities of Youth Lives an Engagement Workforce Development: Implications for Social Work". Society for Social Work and Research (SSWR) presented as ePoster due to COVID-19.

Spindle-Jackson, A., Byrne, T., & Collins, M.E. (2022) "Examining the Impact of State Extended Foster Care Policies on Rates of Youth Homelessness". Society for Social Work and Research (SSWR) presented as ePoster due to COVID-19.

Collins, M.E., & **Spindle-Jackson, A.** (2021) "System-Involved Youth and Workforce Development: How do Localities Address Youth Needs?". Society for Social Work and Research (SSWR) held remotely due to COVID-19.

Renée Cammarata Hamilton MSW, MPA

Ex. 6 Personal Privacy (PP)

PROFESSIONAL SUMMARY

Team leader with more than 20 years of experience advocating for creating systemic population change through a focus on health equity data & community building. Deep knowledge & experience of community health needs assessments, social determinants of health, collective impact & effective program management. Management experience & skills necessary to function independently.

HIGHLIGHTED ACCOMPLISHMENTS

- Led hospital wide team in achieving community-centered metrics to secure \$12M in Medicaid Waiver payments.
- Developed processes for healthcare systems integration to address social risk factors among patients.
- Principal author of community needs assessments
- Co-Director of Tufts University Family Medicine Residency's Community Health & Equity Program
- Institutional leader in legislative advocacy for food & health equity

PROFESSIONAL EXPERIENCE

DIRECTOR, HEALTH IMPROVEMENT TEAM: CAMBRIDGE HEALTH ALLIANCE

Jul 2016- Current

CLINICAL INSTRUCTOR: TUFTS UNIVERSITY SCHOOL OF MEDICINE

Oct 2011 - Current

- Directing multisectoral team efforts on Community & Population Health Improvement in 8 city Primary Service Area, focusing on developing collaborative partnerships to identify/address community needs related to Social Determinants of Health
- Leading departmental efforts for the MassHealth ACO pilot to develop SDOH referral pathways, deepen partner relationships and create partner agency related referral information
- Integrating population health, community health and equity principles into the community health clinic setting
- Developed curriculum and trained family medicine physicians in community medicine advocacy principles & Community Health Workers in Social Determinants of Health and Health Equity principles
- Leading system wide development of Food Security Strategic Plan for patients and community

MANAGER, MALDEN HEALTH IMPROVEMENT: CAMBRIDGE HEALTH ALLIANCE

Oct 2007- Jul 2016

- Managing multidisciplinary team on 3 year, \$12M Medicaid Waiver project to improve the hospital system's efforts in meeting population health measures including: building effective substance use disorder service improvements & connecting providers with community resources that address the Social Determinants of Health
- Organizing and leading a broad-based health improvement coalition made of individuals and organizations in the Malden community
- Responsible for recruiting leadership, managing stakeholder relationships, contributing to public health policy development, managing project milestones and federal/state/private foundation funding opportunities
- Identifying venues for community-based preventative health screenings, providing information and referral to primary care, community services, and low cost/free health care coverage options
- Designing and conducting qualitative research, including leading focus groups, writing and editing survey research instruments, facilitating community meetings and presenting data to raise awareness at public events
- Promoting community education and empowerment through advising numerous community groups on issues of capacity building, organizational development, public advocacy and community outreach
- Identifying educational and health disparities through community health assessment processes and designing collaborative community health programs accordingly.
- Principal author for community health needs assessments, implementation plans, strategic plans & reports

INDEPENDENT CONSULTANT

Jan 2001-Jun 2009

- USAID/ACDI-VOCA, (Uganda-2009, Tanzania-2005) Conducted gender analysis of USAID-funded Food for Peace business enterprise development projects in coastal Tanzania and post-conflict Northern Uganda. Designed and

conducted a train-the-trainer for staff & community development officers. Prepared & presented written report at USAID Regional Headquarters, Dar Es Salaam & at ACDI/VOCA Headquarters in Kampala

- Massachusetts Housing Opportunities Corp (N. Andover, MA, 2004) Researched Smart Growth & Affordable Housing policy
- Biota Consulting (Finland, 2004) Preparation of technical proposal for an Inter-American Development Bank-sponsored Trade and Environment project. Provided expertise in the area of research and institutional capacity-building within the CAFTA region. Project Focus: *building mechanisms for public dispute and development of conflict resolution strategy regarding the intersection of free trade and environmental practice.*
- United Nations Development Program (Nairobi, Kenya 2002) USAID/Africa 2000+. Facilitated conflict resolution workgroups for Mworoga Women's water project. Served as liaison between UNDP & local women's group
- United Nations Development Program (Kathmandu, Nepal 2001) Gender Specialist Contributed to policy & program strategy development processes focusing on social, economic, & gender development issues with UNDP funded Sustainable Community Development Program (SCDP). Identified policy & program gaps concerning gender & sustainable development initiatives. Principal author on the report titled: "*Gender & Sustainable Development Strategies for the SDAN.*" Contributed to the development of the *Sustainable Development Agenda for Nepal (SDAN)* & writing/editing of the *SCDP-Nepal Capacity 21 Country Report*.

DIRECTOR, TOWN OF HOPKINTON, MA

Jul 2005-Oct 2007

- Directed community development & youth substance abuse prevention with a budget of \$200,000
- Developed strategic plan with community partners to ensure a cohesive and comprehensive approach to youth substance abuse prevention, intervention, and access to treatment
- Convened a community coalition to carry out identified goals and promoted sustainability of the initiative
- Developed student leadership potential through education about healthy decision making and communication strategies with their peers and parents Facilitated establishment of student led projects to build youth resiliency

COORDINATOR, INTEGRATED COMMUNITY PLANNING, INC., OSWEGO, NY

Oct 2001- Jun 2003

- Performed county wide service gap analysis with the goal of improving services serving youth
- Evaluated programs targeted toward at-risk youth in the County of Oswego, NY
- Facilitated a countywide process to redesign intake system for youth

EDUCATION

Maxwell School of Citizenship and Public Affairs, Syracuse University

Master of Public Administration (MPA)

Syracuse, NY

June 2004

Brown School of Social Work, Washington University

Master of Social Work (MSW)

St. Louis, MO

May 2001

Clark University

Bachelor of Arts (BA)

Worcester, MA

May 1998

Selected Community Membership/Appointments and Community Honors

- Found in Translation, *Board Member* (2021-Present)
- Metro North Housing Corporation, *Board Member* (2016-Present)
- Harvard Medical School, Harvard University Chan School of Public Health, Tufts University, Tufts University Medical School & Cambridge College *Guest Lecturer* (2014- present)
- Housing, Health & Hunger Advocacy Committee, *Facilitator* (2010-present)
- *Statewide Advisory Council Member* to Commissioner of MA Department of Children & Families (2012-2015)
- Tufts University School of Medicine - *Significant Contribution to the Education of Future Family Physicians*, 2020
- Action for Boston Community Development - *Community Hero Award*, 2018
- Families for Depression Awareness - *Distinguished Service in Mental Health Advocacy award*, 2013
- Found in Translation - *Culture Catalyst Award Winner*, 2012

Ellin Reisner

eRA COMMONS USER NAME (agency login): STEPmtvernon51#

POSITION TITLE: President, Somerville Transportation Equity Partnership

EDUCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Boston University, College of Communications	BS	05/68	Communications
Boston University School of Social Work	MSW	5/79	Social Work
Boston University Graduate School of Arts and Sciences	Ph.D.	5/00	Sociology

A. Community Collaboration in Research

- Co-investigator on the Community Assessment of Freeway Exposure and Health study about traffic pollution exposure and health co-facilitator (NIEHS ES015462). This NIEHS-funded study has collected extensive air monitoring data next to highways in and near Boston.
- 2018 to present: Community partner HUD funded study, **Sustainable Air Quality Control in Affordable Housing Near Highways**.
- Co-investigator and field manager of HUD Funded technical study (MALHH0194-09) evaluating the cardio-vascular health benefits of in-home air filtration.
- Community partner on the traffic pollution study within the Boston Puerto Rican Health Study (Tucker, PI: CA148612).
- Community partner on a project funded by Kresge Foundation focusing on policy and practice related to highway pollution in Somerville, MA and the Boston Chinatown neighborhood.
- 200-present: Member of the Tufts Community Research Center.
- 1996 through 2012 I was an active member of in the Transportation Research Board (TRB) of the National Academy of Sciences. TRB work included member of the Management & Productivity Committee, the Environmental Justice Committee and the Transportation, Public Health sub-committee and the Women in Transportation Committee.

Positions and Employment

1982-1985 Adjunct Assistant Professor, Research Associate and Academic Advisor, Boston University
1985-1993 Massachusetts Bay Transportation Authority Human Resources Manager (Media & Customer Service Programs) (1987-1989) Special Assistant to General Manager (1992-1993) Manager, Community and Passenger Relations, Marketing (1987-1989)
Community Relations Specialist, Marketing & Communications (1985- 1987)
1993-1997 Manager, Organizational Development and Training, Massachusetts Port Authority
1997-2000 Principal Consultant, Oracle University Performance Consulting Oracle Corporation
2002-2003 Program Director, Community, Families and Work Program, Women's Studies Research Center Brandeis University, 1-2002 to 11-2003
2002 -2004 Adjunct Faculty, Springfield College, School of Human Services, Boston

2003-2008 Organizational Development and Project Management Consultant, ERS Associates,
2006-present CAFEH Research Team: Community Based Research on Transportation and Mobile Pollution

Other Experience, Professional Memberships and Awards

2007-present: President, Somerville Transportation Equity Partnership (STEP)
2007-2019 Member, Board of Directors of East Somerville Main Streets
2007-2013 Somerville Community Access Television Board Member
2008- Member, Tisch College Community Research Council at Tufts University
2012 City of Somerville Martin Luther King Community Leader Award
2012 MA Commission on the Status of Women Unsung Heroine Award
2015 Honorable Mention, Community-Campus Partnerships for Health annual award, for the Community Assessment of Freeway Exposure and Health Study
Walk Boston Golden Shoe Award for STEP

Relevant Publications

- a. **Brugge D**, Patton AP, Bob A, Reisner E, Lowe L, Bright O-JM, Durant JL, Newman J, Zamore W. Developing policy and practice to reduce traffic-related air pollution exposure. *Environmental Justice* (accepted).
- b. Padró-Martínez LT, Owusu E, Reisner E, Zamore W, Simon MC, Brown CA, Chung M, Mwamburi M, **Brugge D**, Durant JL. A randomized cross-over air filtration intervention trial for reducing cardiovascular health risks in residents of public housing near a highway, *International Journal of Environmental Research and Public Health*, 2015, 12: 7814-7838.
- c. **Brugge D**, Reisner E, Padró-Martínez LT, Zamore W, Owusu E, Durant JL. In-home air filtration for improving cardiovascular health: Lessons from a CBPR study in public housing. *Progress in Community Health Partnerships: Research, Education, and Action*. 2013; 7:49-56.
- d. Lane K.J, Levy J.I, Scammell M.K, Peters J.L., Patton A.P., Reisner E., Lowe L, Zamore W, Durant J., **Brugge D**. **Association of modeled long-term personal exposure to ultrafine particles with inflammatory and coagulation biomarkers**. *Environment International*. 2016; 92-93:173-182.
- e. Hemphill Fuller C, Reisner E, Meglio D, **Brugge D**. Challenges of using community-based participatory research to research and solve environmental problems. In, Participatory partnerships for social action and research. Harter LM, Hamel-Lambert J, Millesen J, eds. 2011:31-48.
- f. **Laws MB, Yeh Y, Reisner E, Stone K, Wang T, Brugge D**. Gender, ethnicity, and environmental risk perception revisited: the importance of residential location. *Journal of Community Health*. 2015; 40(5):948-955.
- c. **Martinez LS, Reisner E, Campbell M, Brugge D**. Participatory Democracy, Community Organizing and the Community Assessment of Freeway Exposure and Health (CAFEH) Partnership. *International Journal of Environmental Research and Public Health*. 2017; 14, 149

Other Research and Publications

- a. Spy Pond Partners, LLC, Barbara Martin, ERS Consulting (**Ellin Reisner**), Randolph-Morgan Consulting, Tools to Aid State Departments of Transportation in Responding to Workforce Challenges. National Cooperative Highway Research Program Workforce Toolkit (<http://146.115.18.166/Workforce10a/NCHRP.aspx>)
- b. **Reisner E**, Analysis and Benchmarking of State Department of Transportation Human Resource Activities, NCHRP Synthesis Project 20-24(48), National Cooperative Highway Research Program, Transportation Research Board, 2007,
- c. Bookman A, Harrington M, **Reisner E**, Pass L, Family Caregiver Handbook: Finding Elder Care Resources in Massachusetts, Massachusetts Institute of Technology, MIT Workplace Center, 2007.
On Line version: <http://web.mit.edu/workplacecenter/hndbk/> [funded by the Alfred P. Sloan Foundation]
- d. Kemp M, Lave C, co-principal investigators, **Reisner E** (a co-author), Part-time Transit Operators: The Trends and Impacts, Transit Cooperative Research Program, Transportation Research Board, National Research Council, 2000.

Interested in integration of land use, transport, environment and health at all spatio-temporal scales

EDUCATION

1986 MS, Massachusetts Inst. of Technology, DUSP, **Real Estate Development**
 1985 & earlier University of Southern Maine, courses in **Accounting and Economics**
 1974 BS, Bowdoin College, **Geology and Biology**

EMPLOYMENT

1986 - Present **Consultant** in real estate development and business deal structuring
 2006 - 2011 **Chief Financial Officer**, QUOSA Inc., maker of research software for most of the world's top 20 pharma and biotech companies, as well as branches of US NIH and research universities. Structured QUOSA sale to REED Elsevier December 31, 2011.
 1979 - 1985 **Vice President** of companies, run from York Harbor ME, involved in real estate development, investment and management, sustainable oil and gas development
 1974 - 1979 Framing and finish carpenter, sustainable seaweed harvesting and processing

VOLUNTEER

2002 - Present **Founder** and principal of **Somerville Transportation Equity Partnership (STEP)**, a grass roots 501c3 which led the citizen campaign for the first two new light rail branches to be built in Massachusetts in six decades. STEP has worked with Tufts University since 2008 on the environmental health research known as CAFEH
 1998 - Present **Founder** and principal of **Mystic View Task Force**, a grass roots Somerville 501c3 which led advocacy for the transformation of the Assembly Square area from a failed regional mall to a dense transit centered mixed use district, including the first new subway stop in Massachusetts in three decades, and expanded Mystic River open space
 2008 - Present **Executive Committee** member of the **Logan Airport CAC** and the **MassPort CAC**, a small state agency, representing Somerville and the region regarding MassPort aviation, port and development impacts. **Chair of MCAC Environment and Health**.
 2003 - Present Member and four time **Co-Chair** of the **MBTA Rider Oversight Committee**, a small state agency representing all users of a large metropolitan area transit system
 2008 - Present **Guest Lecturer** and practicum leader in urban design, real estate development, economic development, transportation, environmental justice and environmental health at regional colleges and universities - including Harvard, MIT, Boston University, RISD, Tufts, BC, Northeastern, Emerson, UNH
 2014 - 2015 **Chair of Union Square CAC**, appointed by Mayor Curtatone, to oversee input from a diverse array of citizens on community re-development preferences for a large urban mixed use district evolving toward extensive future transit-oriented re-development
 2002 - 2012 **Attendee** of roughly 250 Boston **Metropolitan Planning Organization** and 25 Massachusetts Dep. of Environmental Protection **State Implementation Plan** meetings dealing with surface transportation and Clean Air Act compliance
 2001 - 2008 **Steering Committee** Member **MAPC Metro Future**, a formal regional plan for the greater Boston region and its 101 cities and towns
 1999 - 2001 Recruited **Board Member** of **Somerville Chamber of Commerce**

AWARDS

1999 **Economic development** (solo) - Somerville MA Chamber of Commerce
 2000 **Urban design** (group award to Boston Society of Architects Seaport Focus Team) - American Institute of Architects
 2007 **Environmental merit** (solo) - US Environment Protection Agency

SELECTED PUBLICATIONS

- Padró-Martínez LT, Patton AP, Trull JB, **Zamore W**, Brugge D, Durant JL. Mobile monitoring of particle number concentration and other traffic-related air pollutants in a near-highway neighborhood over the course of a year. *Atmospheric Environ.* 2012; 61:253-264. PMC 3491988.
- Brugge D, Reisner E, Padró-Martínez LT, **Zamore W**, Owusu E, Durant JL. In-home air filtration for improving cardiovascular health: lessons from a CBPR study in public housing. *Progress in Community Health Partnerships: Research, Education, and Action.* 2013; 7:49-56. PMC 3663298.
- Fuller CH, Patton AP, Lane K, Laws MB, Marden A, Carrasco E, Spengler J, Mwamburi M, **Zamore W**, Durant JL, Brugge D. A community participatory study of cardiovascular health and exposure to near-highway air pollution: study design methods, *Rev. Env. Health*, 2013, 28:21-35. PMC 3708485
- Patton AP, Collins C, Naumova E, **Zamore W**, Brugge D, Durant JL. An hourly regression model for ultrafine particles in a near-highway urban area, *Environmental Science and Technology*, 2014, 48:3272-3280. PMC 4347899.
- Patton AP, Perkins J, **Zamore W**, Levy JI, Brugge D, Durant JL. Spatial and temporal differences in traffic-related air pollution in three urban neighborhoods near an interstate highway. *Atmospheric Environment*, 2014, 99:309-321. PMC 4212216
- Lane KJ, Levy JI, Scammell MK, Patton AP, Durant JL, Mwamburi M, **Zamore W**, Brugge D, Effect of time-activity adjustment on exposure assessment for traffic-related ultrafine particles, *Journal of Exposure Science and Environmental Epidemiology*, Sep Oct 2015, 25:506-16. PMC 4542140.
- Patton AP, **Zamore W**, Naumova EN, Levy JI, Brugge D, Durant JL. Transferability and generalizability of regression models of ultrafine particles in urban neighborhoods in the Boston Area. *Environmental Science and Technology*, 2015; 49(10):6051-6060. PMC 4440409.
- Padró-Martínez LT, Owusu E, Reisner E, **Zamore W**, Simon MC Mwamburi M,, Brown CA, Chung M, Brugge D, Durant JL. A randomized cross-over air filtration intervention trial for reducing cardiovascular health risks in residents of public housing near a highway, *International Journal of Environmental Research and Public Health*, 2015, 12:7814-7838. PMC 4515693.
- Lane KJ, Levy JI, Scammell MK, Peters JL, Patton AP, Reisner E, Lowe L, **Zamore W**, Durant JL, Brugge D. Association of modeled long-term personal exposure to ultrafine particles with inflammatory and coagulation biomarkers, *Environment Int.*, 2016, 92-93:173-182. PMC 27107222.
- Brugge D, Patton AP, Bob A, Reisner E, Lowe L, Bright OM, Durant JL, Newman J, **Zamore W**. Developing community level policy and practice to reduce traffic-related air pollution exposure. *Environmental Justice*, 2015; 8:95-104. PMC 4939908
- Hudda N, Simon MC, **Zamore W**, Brugge D, Durant JL. Aviation emissions impact ambient ultrafine particle concentrations in the greater Boston area, *Environmental Science & Technology*, 2016, Aug 16;50(16):8514-21. PMC 5650728
- Martinez LS, **Zamore W**, Finley A, Reisner E, Lowe L, Brugge D. CBPR partnerships and near-roadway pollution: a promising strategy to influence the translation of research into practice, *Environments (Basel)*, 2020, 7(6):44, PMC 7470231
- Martinez LS, Dimitri N, Ron S, Hudda N, **Zamore W**, Lowe L, Echevarria B, Durant JL, Brugge D, Reisner E. Two communities, one highway and the fight for clean air: the role of political history in shaping community engagement and environmental health research translation, *BMC Public Health*, 2020, 20(1):1690, PMC 7656715
- Ron S, Dimitri N, Ginsburg SL, Reisner E, Martinez PB, **Zamore W**, Echevarria B, Brugge D, Martinez LS. Health Lens Analysis: A strategy to engage community in environmental health research in action, *Sustainability*, 2021, 13(4):1748, PMC 8112597
- Hudda H, Eliasziw M, Hersey SP, Reisner E, Brook RD, **Zamore W**, Durant JL, Brugge D. Effect of reducing ambient traffic-related air pollution on blood pressure: A randomized crossover trial, *Hypertension*, 77(3):823-832, PMC 7878425

Ellin Reisner

eRA COMMONS USER NAME (agency login): STEPmtvernon51#

POSITION TITLE: President, Somerville Transportation Equity Partnership

EDUCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
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Positions and Employment

1982-1985 Adjunct Assistant Professor, Research Associate and Academic Advisor, Boston University
1985-1993 Massachusetts Bay Transportation Authority Human Resources Manager (Media & Customer Service Programs) (1987-1989) Special Assistant to General Manager (1992-1993) Manager, Community and Passenger Relations, Marketing (1987-1989)
Community Relations Specialist, Marketing & Communications (1985- 1987)
1993-1997 Manager, Organizational Development and Training, Massachusetts Port Authority
1997-2000 Principal Consultant, Oracle University Performance Consulting Oracle Corporation
2002-2003 Program Director, Community, Families and Work Program, Women's Studies Research Center Brandeis University, 1-2002 to 11-2003
2002 -2004 Adjunct Faculty, Springfield College, School of Human Services, Boston

2003-2008 Organizational Development and Project Management Consultant, ERS Associates,
2006-present CAFEH Research Team: Community Based Research on Transportation and Mobile Pollution

Other Experience, Professional Memberships and Awards

2007-present: President, Somerville Transportation Equity Partnership (STEP)
2007-2019 Member, Board of Directors of East Somerville Main Streets
2007-2013 Somerville Community Access Television Board Member
2008- Member, Tisch College Community Research Council at Tufts University
2012 City of Somerville Martin Luther King Community Leader Award
2012 MA Commission on the Status of Women Unsung Heroine Award
2015 Honorable Mention, Community-Campus Partnerships for Health annual award, for the Community Assessment of Freeway Exposure and Health Study
Walk Boston Golden Shoe Award for STEP

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- b. Padró-Martínez LT, Owusu E, Reisner E, Zamore W, Simon MC, Brown CA, Chung M, Mwamburi M, **Brugge D**, Durant JL. A randomized cross-over air filtration intervention trial for reducing cardiovascular health risks in residents of public housing near a highway, *International Journal of Environmental Research and Public Health*, 2015, 12: 7814-7838.
- c. **Brugge D**, Reisner E, Padró-Martínez LT, Zamore W, Owusu E, Durant JL. In-home air filtration for improving cardiovascular health: Lessons from a CBPR study in public housing. *Progress in Community Health Partnerships: Research, Education, and Action*. 2013; 7:49-56.
- d. Lane K.J, Levy J.I, Scammell M.K, Peters J.L., Patton A.P., Reisner E., Lowe L, Zamore W, Durant J., **Brugge D**. **Association of modeled long-term personal exposure to ultrafine particles with inflammatory and coagulation biomarkers**. *Environment International*. 2016; 92-93:173-182.
- e. Hemphill Fuller C, Reisner E, Meglio D, **Brugge D**. Challenges of using community-based participatory research to research and solve environmental problems. In, Participatory partnerships for social action and research. Harter LM, Hamel-Lambert J, Millesen J, eds. 2011:31-48.
- f. **Laws MB, Yeh Y, Reisner E, Stone K, Wang T, Brugge D**. Gender, ethnicity, and environmental risk perception revisited: the importance of residential location. *Journal of Community Health*. 2015; 40(5):948-955.
- c. **Martinez LS, Reisner E, Campbell M, Brugge D**. Participatory Democracy, Community Organizing and the Community Assessment of Freeway Exposure and Health (CAFEH) Partnership. *International Journal of Environmental Research and Public Health*. 2017; 14, 149

Other Research and Publications

- a. Spy Pond Partners, LLC, Barbara Martin, ERS Consulting (**Ellin Reisner**), Randolph-Morgan Consulting, Tools to Aid State Departments of Transportation in Responding to Workforce Challenges. National Cooperative Highway Research Program Workforce Toolkit (<http://146.115.18.166/Workforce10a/NCHRP.aspx>)
- b. **Reisner E**, Analysis and Benchmarking of State Department of Transportation Human Resource Activities, NCHRP Synthesis Project 20-24(48), National Cooperative Highway Research Program, Transportation Research Board, 2007,
- c. Bookman A, Harrington M, **Reisner E**, Pass L, Family Caregiver Handbook: Finding Elder Care Resources in Massachusetts, Massachusetts Institute of Technology, MIT Workplace Center, 2007.
On Line version: <http://web.mit.edu/workplacecenter/hndbk/> [funded by the Alfred P. Sloan Foundation]
- d. Kemp M, Lave C, co-principal investigators, **Reisner E** (a co-author), Part-time Transit Operators: The Trends and Impacts, Transit Cooperative Research Program, Transportation Research Board, National Research Council, 2000.

Christopher Marchi

Ex. 6 Personal Privacy (PP)

Private Real Estate Development

2017 - Present

- Direct capital improvement program for 11 residential units
- Produce floor plans, manage contractors, coordinate permitting and planning for redevelopment projects
- Provide housing services for 25 clients

Friends of the East Boston Greenway: Director of Stewardship (FOEBG)

2017 - 2019

- Develop open space place-making programs
- Provide technical support for environmental planning and permitting initiatives
- Coordinate community education, engagement and comment for open space advocacy

NOAH: Director of Community Building and Environment (CB&E)

2013 - 2017

- Direct Environmental Justice planning and advocacy responses for multiple community priorities
- Design and implement effective community engagement strategies
- Develop social bonding and bridging strategies to enhance community building
- Direct Climate Change advocacy program
- Lead grant writing team in successful submissions netting over \$1.25 M in funding
- Lead programming, staffing, management, budgeting, and planning for a busy environmental programming team
- Direct communication planning
- Design and implement a *Community Youth Leadership Development System*
- Engineer operational and staffing framework to support CB&E mission
- Support academic research: Boston Architectural College, Umass, Tufts, BU

Boston Natural Areas Network: Youth Conservation Corps (YCC)

2011 - 2012

- Train, manage, support 60 youth, 4 crew leaders, various projects, 5 project sites

Airport Impact Relief Incorporated; Vice President

1995 – Present

- Environmental analyses; review technical documentation, provide comment
- Policy development; develop policy responses advance environmental health
- Regional coordination; support advocacy partner groups across the metropolitan area
- Project leadership; create and implement project level responses
- Communications; develop social media, print and video content for regional audiences

City of Boston: Recycling Division

1990 – 1998

- Marketing and creative direction
- Customer service; manage call center, improve customer experience

www.ChrisMarchi.com

Christopher Marchi

Ex. 6 Personal Privacy (PP)

PROJECT HIGHLIGHTS

- Authored Kresge Foundation grant award winning *ClimateCARE* community based resiliency planning initiative
- Designed and produced Greenway Concert Program
- Created *Supported Community Planning Processes* engagement model
- Directed successful Youth-led *Head to Head Operations* FAA advocacy campaign
- Directed successful *Sumner Tunnel Toll Plaza Redesign* intervention
- Founded *Battle of Noddle Island Regatta* and *Revolutionary War Reenactment*
- Led *Waterfront Initiative* redefining urban residents' waterfront experience through guided tours and explorations
- Free Kayaking Program: procurement of equipment and fundraising for youth-led free kayaking programming which has served 12,000 resident participants
- Youth Participatory Research Program
- Youth Open Space Stewardship Campaign
- Community Historical Education: Battle of Noddle Island Regatta
- Youth-run Family Movie Night Event, 4 East Boston locations
- Producer; *Destination: East Boston*, a public education documentary
- Health initiative, Airports Health Forum, Air Filtration advocacy campaign
- Led East Boston (Mary Ellen Welch) Greenway Extension Campaigns 2014, 2015
- *Rising Waters*; Climate Change Awareness Environmental Art Installation, 2013
- Co-Founder; Community Commons Research Project: East Boston, 2012 – 2015
- Youth led Anti-Litter Research and Advocacy Campaigns: 2004, 2013, 2016

VOLUNTEER

- Commissioner: Metropolitan Beaches Commission
- Representative: Logan Airport Community Advisory Committee
- Trustee: The East Boston Foundation
- Create and manage Pollution Solution Campaign BPWD Recycling; 1996

AWARDS

- Greenovate Award 2015
- Good Neighbor Award, Friends of Belle Isle Marsh, 2012

EDUCATION

- Boston Latin School, 1984
- Mass College of Art, Studies in Media (SIM) Multi-media Program
- Urban College of Boston, Management and Sociology

Preaward Compliance Review Report for All Applicants and Recipients Requesting EPA Financial Assistance

Note: Read Instructions before completing form.

I. A. Applicant/Recipient (Name, Address, City, State, Zip Code)

Name:

Address:

City:

State: Zip Code:

B. DUNS No.

II. Is the applicant currently receiving EPA Assistance? ☒ Yes ☐ No

III. List all civil rights lawsuits and administrative complaints pending against the applicant/recipient that allege discrimination based on race, color, national origin, sex, age, or disability. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7.)

IV. List all civil rights lawsuits and administrative complaints decided against the applicant/recipient within the last year that allege discrimination based on race, color, national origin, sex, age, or disability and enclose a copy of all decisions. Please describe all corrective actions taken. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7.)

V. List all civil rights compliance reviews of the applicant/recipient conducted by any agency within the last two years and enclose a copy of the review and any decisions, orders, or agreements based on the review. Please describe any corrective action taken. (40 C.F.R. § 7.80(c)(3))

VI. Is the applicant requesting EPA assistance for new construction? If no, proceed to VII; if yes, answer (a) and/or (b) below.

☐ Yes ☒ No

a. If the grant is for new construction, will all new facilities or alterations to existing facilities be designed and constructed to be readily accessible to and usable by persons with disabilities? If yes, proceed to VII; if no, proceed to VI(b).

☐ Yes ☐ No

b. If the grant is for new construction and the new facilities or alterations to existing facilities will not be readily accessible to and usable by persons with disabilities, explain how a regulatory exception (40 C.F.R. 7.70) applies.

VII. Does the applicant/recipient provide initial and continuing notice that it does not discriminate on the basis of race, color, national origin, sex, age, or disability in its program or activities? (40 C.F.R. 5.140 and 7.95)

☒ Yes ☐ No

a. Do the methods of notice accommodate those with impaired vision or hearing?

☐ Yes ☒ No

b. Is the notice posted in a prominent place in the applicant's offices or facilities or, for education programs and activities, in appropriate periodicals and other written communications?

☒ Yes ☐ No

c. Does the notice identify a designated civil rights coordinator?

☐ Yes ☒ No

VIII. Does the applicant/recipient maintain demographic data on the race, color, national origin, sex, age, or handicap of the population it serves? (40 C.F.R. 7.85(a))

☐ Yes ☒ No

IX. Does the applicant/recipient have a policy/procedure for providing access to services for persons with limited English proficiency? (40 C.F.R. Part 7, E.O. 13166)

☐ Yes ☒ No

- X. If the applicant is an education program or activity, or has 15 or more employees, has it designated an employee to coordinate its compliance with 40 C.F.R. Parts 5 and 7? Provide the name, title, position, mailing address, e-mail address, fax number, and telephone number of the designated coordinator.**

N/A

- XI. If the applicant is an education program or activity, or has 15 or more employees, has it adopted grievance procedures that assure the prompt and fair resolution of complaints that allege a violation of 40 C.F.R. Parts 5 and 7? Provide a legal citation or Internet Address for, or a copy of, the procedures.**

N/A

For the Applicant/Recipient

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. I assure that I will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized Official

Patrick Herron

B. Title of Authorized Official

Executive Director

C. Date

03/25/2022

For the U.S. Environmental Protection Agency

I have reviewed the information provided by the applicant/recipient and hereby certify that the applicant/recipient has submitted all preaward compliance information required by 40 C.F.R. Parts 5 and 7; that based on the information submitted, this application satisfies the preaward provisions of 40 C.F.R. Parts 5 and 7; and that the applicant has given assurance that it will fully comply with all applicable civil rights statutes and EPA regulations.

A. *Signature of Authorized EPA Official

B. Title of Authorized Official

C. Date

*** See Instructions**

Instructions for EPA FORM 4700-4 (Rev. 06/2014)

General. Recipients of Federal financial assistance from the U.S. Environmental Protection Agency must comply with the following statutes and regulations.

Title VI of the Civil Rights Acts of 1964 provides that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. The Act goes on to explain that the statute shall not be construed to authorize action with respect to any employment practice of any employer, employment agency, or labor organization (except where the primary objective of the Federal financial assistance is to provide employment). Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act provides that no person in the United States shall on the ground of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under the Federal Water Pollution Control Act, as amended. Employment discrimination on the basis of sex is prohibited in all such programs or activities. Section 504 of the Rehabilitation Act of 1973 provides that no otherwise qualified individual with a disability in the United States shall solely by reason of disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. Employment discrimination on the basis of disability is prohibited in all such programs or activities. The Age Discrimination Act of 1975 provides that no person on the basis of age shall be excluded from participation under any program or activity receiving Federal financial assistance. Employment discrimination is not covered. Age discrimination in employment is prohibited by the Age Discrimination in Employment Act administered by the Equal Employment Opportunity Commission. Title IX of the Education Amendments of 1972 provides that no person in the United States on the basis of sex shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance. Employment discrimination on the basis of sex is prohibited in all such education programs or activities. Note: an education program or activity is not limited to only those conducted by a formal institution. 40 C.F.R. Part 5 implements Title IX of the Education Amendments of 1972. 40 C.F.R. Part 7 implements Title VI of the Civil Rights Act of 1964, Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act, and Section 504 of The Rehabilitation Act of 1973. The Executive Order 13166 (E.O. 13166) entitled; "Improving Access to Services for Persons with Limited English Proficiency" requires Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries.

Items "Applicant" means any entity that files an application or unsolicited proposal or otherwise requests EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Recipient" means any entity, other than applicant, which will actually receive EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Civil rights lawsuits and administrative complaints" means any lawsuit or administrative complaint alleging discrimination on the basis of race, color, national origin, sex, age, or disability pending or decided against the applicant and/or entity which actually benefits from the grant, but excluding employment complaints not covered by 40 C.F.R. Parts 5 and 7. For example, if a city is the named applicant but the grant will actually benefit the Department of Sewage, civil rights lawsuits involving both the city and the Department of Sewage should be listed. "Civil rights compliance review" means any review assessing the applicant's and/or recipient's compliance with laws prohibiting discrimination on the basis of race, color, national origin, sex, age, or disability. Submit this form with the original and required copies of applications, requests for extensions, requests for increase of funds, etc. Updates of information are all that are required after the initial application submission. If any item is not relevant to the project for which assistance is requested, write "NA" for "Not Applicable." In the event applicant is uncertain about how to answer any questions, EPA program officials should be contacted for clarification. * Note: Signature appears in the Approval Section of the EPA Comprehensive Administrative Review For Grants/Cooperative Agreements & Continuation/Supplemental Awards form.



EPA KEY CONTACTS FORM

OMB Number: 2030-0020
Expiration Date: 06/30/2024

Authorized Representative: *Original awards and amendments will be sent to this individual for review and acceptance, unless otherwise indicated.*

Name:	Prefix:	First Name:	Middle Name:
		Patrick	
	Last Name:		Suffix:
	Herron		
Title:	Executive Director		
Complete Address:			
Street1:	20 Academy Street		
Street2:	STE 306		
City:	State:	MA: Massachusetts	
Arlington			
Zip / Postal Code:	Country:	USA: UNITED STATES	
02476			
Phone Number:	Fax Number:		
781-316-3438			
E-mail Address:	Patrick.Herron@mysticriver.org		

Payee: *Individual authorized to accept payments.*

Name:	Prefix:	First Name:	Middle Name:
		Alejandra	
	Last Name:		Suffix:
	Narvaez		
Title:	Operations Manager		
Complete Address:			
Street1:	20 Academy Street		
Street2:			
City:	State:	MA: Massachusetts	
Arlington			
Zip / Postal Code:	Country:	USA: UNITED STATES	
02476			
Phone Number:	Fax Number:		
781-316-3438			
E-mail Address:	alejandra.narvaez@mysticriver.org		

Administrative Contact: *Individual from Sponsored Programs Office to contact concerning administrative matters (i.e., indirect cost rate computation, rebudgeting requests etc).*

Name:	Prefix:	First Name:	Middle Name:
		Alejandra	
	Last Name:		Suffix:
	Narvaez		
Title:	Operations Manager		
Complete Address:			
Street1:	20 Academy Street		
Street2:			
City:	State:	MA: Massachusetts	
Arlington			
Zip / Postal Code:	Country:	USA: UNITED STATES	
02476			
Phone Number:	Fax Number:		
781-316-3438			
E-mail Address:	alejandra.narvaez@mysticriver.org		

EPA KEY CONTACTS FORM

Project Manager: *Individual responsible for the technical completion of the proposed work.*

Name: **Prefix:** **First Name:** **Middle Name:**

Last Name: **Suffix:**

Title:

Complete Address:

Street1:

Street2:

City:

State:

Zip / Postal Code:

Country:

Phone Number:

Fax Number:

E-mail Address:

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

Add Mandatory Project Narrative File

Delete Mandatory Project Narrative File

View Mandatory Project Narrative File

To add more Project Narrative File attachments, please use the attachment buttons below.

Add Optional Project Narrative File

Delete Optional Project Narrative File

View Optional Project Narrative File

Other Attachment File(s)

* Mandatory Other Attachment Filename:

Add Mandatory Other Attachment

Delete Mandatory Other Attachment

View Mandatory Other Attachment

To add more "Other Attachment" attachments, please use the attachment buttons below.

Add Optional Other Attachment

Delete Optional Other Attachment

View Optional Other Attachment

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 02/28/2022

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. EPA-OAR-OAQPS-22-01	66.034	\$ 0.00	\$ 0.00	\$ 499,979.00	\$ 0.00	\$ 499,979.00
2.						
3.						
4.						
5. Totals		\$ 0.00	\$ 0.00	\$ 499,979.00	\$ 0.00	\$ 499,979.00

Standard Form 424A (Rev. 7-97)
Prescribed by OMB (Circular A -102) Page 1

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	EPA-OAR-OAQPS-22-01				
a. Personnel	\$ 163,147.00	\$	\$	\$	\$ 163,147.00
b. Fringe Benefits	28,061.00				28,061.00
c. Travel	7,000.00				7,000.00
d. Equipment	42,750.00				42,750.00
e. Supplies	24,369.00				24,369.00
f. Contractual	70,000.00				70,000.00
g. Construction	0.00				0.00
h. Other	122,299.00				122,299.00
i. Total Direct Charges (sum of 6a-6h)	457,626.00				\$ 457,626.00
j. Indirect Charges	42,353.00				\$ 42,353.00
k. TOTALS (sum of 6i and 6j)	\$ 499,979.00	\$	\$	\$	\$ 499,979.00
7. Program Income	\$	\$	\$	\$	\$

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Prescribed by OMB (Circular A -102) Page 1A

SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8. EPA-OAR-OAQPS-22-01	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

SECTION D - FORECASTED CASH NEEDS				
Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$	\$	\$	\$
14. Non-Federal	\$			
15. TOTAL (sum of lines 13 and 14)	\$	\$	\$	\$

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)			
	(b)First	(c) Second	(d) Third	(e) Fourth
16. EPA-OAR-OAQPS-22-01	\$	\$	\$	\$
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	\$	\$	\$	\$

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges: 457623	22. Indirect Charges: 42353
23. Remarks:	

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Prescribed by OMB (Circular A -102) Page 2

Application for Federal Assistance SF-424

* 1. Type of Submission: <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application		* 2. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision		* If Revision, select appropriate letter(s): <input type="text"/> * Other (Specify): <input type="text"/>	
* 3. Date Received: <input type="text" value="03/25/2022"/>		4. Applicant Identifier: <input type="text"/>			
5a. Federal Entity Identifier: <input type="text"/>			5b. Federal Award Identifier: <input type="text"/>		
State Use Only:					
6. Date Received by State: <input type="text"/>		7. State Application Identifier: <input type="text" value="MA"/>			
8. APPLICANT INFORMATION:					
* a. Legal Name: <input type="text" value="Mystic River Watershed Association"/>					
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="23-7221094"/>			* c. Organizational DUNS: <input type="text" value="7845108490000"/>		
d. Address:					
* Street1:		<input type="text" value="20 Academy Street"/>			
Street2:		<input type="text" value="STE 306"/>			
* City:		<input type="text" value="Arlington"/>			
County/Parish:		<input type="text"/>			
* State:		<input type="text" value="MA: Massachusetts"/>			
Province:		<input type="text"/>			
* Country:		<input type="text" value="USA: UNITED STATES"/>			
* Zip / Postal Code:		<input type="text" value="02476-6401"/>			
e. Organizational Unit:					
Department Name: <input type="text"/>			Division Name: <input type="text"/>		
f. Name and contact information of person to be contacted on matters involving this application:					
Prefix:		* First Name: <input type="text" value="Patrick"/>			
Middle Name:		<input type="text"/>			
* Last Name:		<input type="text" value="Herron"/>			
Suffix:		<input type="text"/>			
Title: <input type="text" value="Executive Director"/>					
Organizational Affiliation: <input type="text"/>					
* Telephone Number: <input type="text" value="781-316-3438"/>			Fax Number: <input type="text"/>		
* Email: <input type="text" value="patrick.herron@mysticriver.org"/>					

Application for Federal Assistance SF-424

* 9. Type of Applicant 1: Select Applicant Type:

M: Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education)

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.034

CFDA Title:

Surveys, Studies, Research, Investigations, Demonstrations, and Special Purpose Activities
Relating to the Clean Air Act

* 12. Funding Opportunity Number:

EPA-OAR-OAQPS-22-01

* Title:

Enhanced Air Quality Monitoring for Communities

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

1234-Project Locations.docx

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:

Community-Led Improvement of Air Quality and Health in Lower Mystic (CLEANAIR)

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424**16. Congressional Districts Of:*** a. Applicant * b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:* a. Start Date: * b. End Date: **18. Estimated Funding (\$):**

* a. Federal	<input type="text" value="499,979.00"/>
* b. Applicant	<input type="text" value="0.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="499,979.00"/>

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- ☐ a. This application was made available to the State under the Executive Order 12372 Process for review on
- ☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- ☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**☐ Yes ☒ No

If "Yes", provide explanation and attach

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title: * Telephone Number: Fax Number: * Email: * Signature of Authorized Representative: * Date Signed:

I. Cover page

Project Title: Community-Led Improvement of Air Quality and Health in the Lower Mystic (CLEANAIR)

Applicant Information:

Mystic River Watershed Association, 20 Academy St. Suite 306, Arlington MA 02476
Patrick Herron, Executive Director, 781-316-3438, patrick.herron@mysticriver.org
DUNS number: 784510849

Set-Aside: No set aside

Brief Description of Applicant Organization: The Mystic River Watershed Association (MyRWA) is a nonprofit organization dedicated to the improvement of the Mystic watershed for a healthy environment and healthy people. The organization uses a network of volunteers and citizen scientists to track environmental conditions, develop actionable data, and work with community partners toward clean water, restored habitat, and a healthy environment for people. MyRWA has a 20-year water quality monitoring program that is held up by the EPA as a model program and has resulted in both policy and on-the-ground green infrastructure improvements in a dozen municipalities in the watershed. Our long-term community engagement efforts have yielded significant participation rates: each year we work with over 1,000 volunteers, educate over 1,000 students, and inform 20,000 residents through effective communications of environmental conditions. Building on this highly successful model, MyRWA seeks to (1) help residents and municipalities address emerging problems and concerns related to air pollution and health impacts, and (2) build capacity to address future air quality problems in the Mystic.

Project Partner(s) (if applicable): Our project team consists of a coalition of community partners representing environmental advocacy (MyRWA), transportation-related advocacy (AIR, Inc., Chris Marchi; STEP, Wig Zamore & Ellen Reisner), health care (Cambridge Health Alliance, Renee Cammarata Hamilton and Laura McNulty) and government (Mayor Christenson of the City of Malden; Mayor DeMaria of the City of Everett). We will contract with Tufts University for air quality monitoring assistance and with Boston University for assistance with community outreach.

Project Location: Charlestown, MA 02129; East Boston, MA 02128; Everett, MA 02149; Malden, MA 02148 + 02180

Air Pollutant Scope: PM10, PM2.5, and ultrafine particles

Budget Summary:

EPA Funding Request	Total Project Cost
\$499,979	\$499,979

Project Period: November 1, 2022 to October 31, 2025

Project Description: The goal of our project is to improve air quality and health in communities in the watershed that are most burdened by transportation-related air pollution and disease. By deploying dense networks of air pollution monitors at community-identified locations in each of four cities, we will provide actionable data and information to increase community awareness, inform decision-making around transportation infrastructure, and reduce exposures to harmful transportation-related particulate air pollutants including PM10, PM2.5, and ultrafine particles. Through a 12 member Community Advisory Board and extensive surveying and outreach, the team will build capacity among residents that have been disproportionately impacted by poor air quality.

1A. Overall Project Workplan

The goals of the project are to provide actionable air quality data to the communities of Charlestown, East Boston, Everett and Malden (Figure 1) in the Lower Mystic, quantify localized air quality disparities and impacts, lead community assessments of air quality, build local capacity, strengthen partnerships, and ultimately reduce air quality and health disparities. To achieve these goals we will (1) develop a Community Advisory Board to help guide monitoring, improve community engagement and inform mitigation strategies; (2) deploy particulate pollution monitors (PM10, PM2.5, and ultrafine particles) for both long-term and short-term monitoring projects in each of four Lower Mystic communities; (3) improve understanding about air quality issues through surveys, listening sessions, and report-backs as part of the community assessment; and (4) engage residents, municipalities and project partners in developing mitigation strategies aimed at improving air quality over the long term.

Objective 1. Develop and facilitate a Community Advisory Board to help guide study design, community engagement and mitigation strategies

We will develop a Community Advisory Board (CAB) composed of representatives from each of the four communities (12 members, 3 per community). The CAB will advise on (1) monitoring project selection, prioritization and design, (2) the design of understandable data products (e.g., maps, tables, charts) to reach as wide an audience as possible, (3) survey data collection, (4) conducting public listening and report-back sessions, (5) information dissemination, and (6) potential mitigation strategies. The study team will provide training to the CAB in air quality science and mitigation strategies, and we will collaborate with the CAB to help translate research findings into educational materials. The study team will provide logistical support for the CAB (e.g., scheduling meetings, providing physical and online (e.g., Zoom) meeting space, and taking meeting minutes).

Objective 2. Implement a long-term monitoring network and conduct community-scale monitoring projects.

Because long-term air quality data have not been systematically collected and made publicly available in the four communities, it is essential to collect data at the local scale to begin informed engagement with community members. Our monitoring program will have two complementary parts running in parallel: in the first we will develop a monitoring network across the four Lower Mystic communities (henceforth, Lower Mystic Network; LMN), and in the second we will perform a set of projects - one in each community - that are highly responsive to community concerns (henceforth, Lower Mystic Community Projects; LMCP).

Lower Mystic Network (LMN). We will deploy a network of stationary monitors to measure PM2.5 and PM10 with at least one station in each of our four partner communities. The goal is to provide long-term data (i.e., months, seasons, years) for engagement with communities and to complement data collected with the LMCP. Monitoring will begin in the second quarter of the project in all four communities and continue through the end of year 3. We expect that the LMN will be maintained by MyRWA after the EPA-funded period ends.

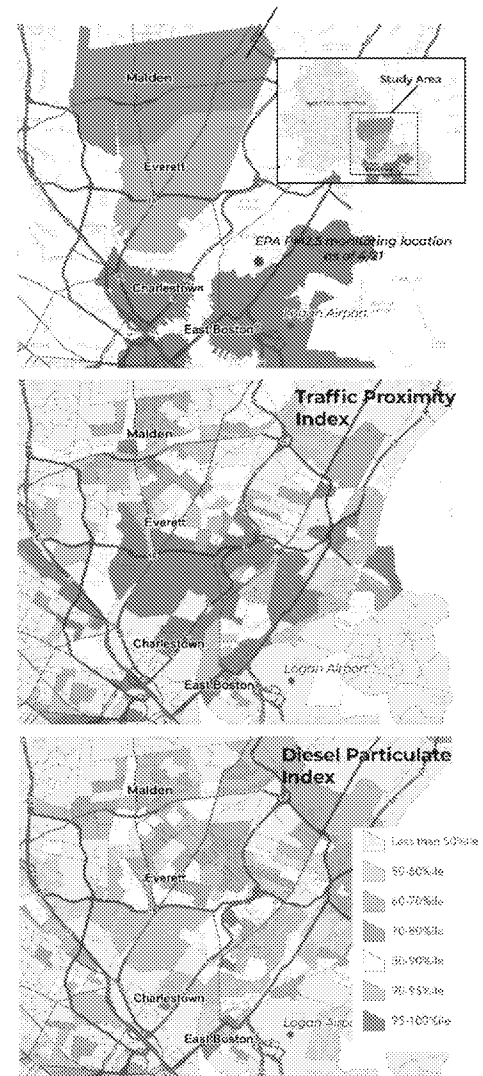
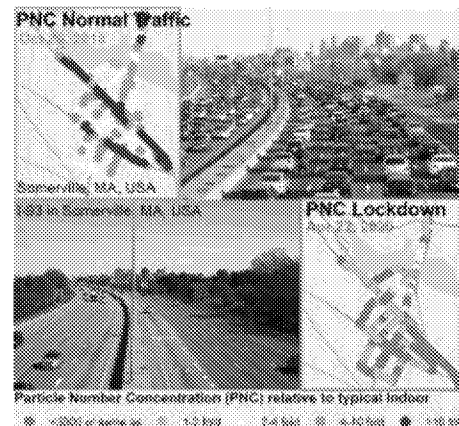


Figure 1: Map showing the communities this study will be based in and comparison of EPA's EJ screen indexes with other communities in the region

Lower Mystic Community Projects (LMCP). LMCPs will focus on (1) quantifying air quality impacts at spatial scales associated with transportation-related air quality concerns (airport, highways, trucking/cargo facilities, idling violations, congestion) in the communities and (2) providing actionable data. We will quantify impact relative to the local background, which will be determined with fine scale monitoring across the community and using the LMN data. Within each community, monitoring will be conducted at up to 7 locations (all 7 with PM2.5 and PM10 monitors and 3 of 7 with ultrafine particle number concentration measurements). These projects will engage the CAB and the community in site selection, monitoring, data interpretation and communication of results. Monitoring site location selection will be guided by response to questions on the community survey (see Objective 3). Concurrent mobile monitoring (conducted using the Tufts Air Pollution Monitoring Lab (TAPL)) will supplement the community projects as needed and precede the listening sessions to produce visual data products for the sessions. The TAPL is based in an electric vehicle and has been used extensively in previous research (e.g., Hudda et al., 2020). Monitoring runs will be conducted along routes that will yield data at fine spatial resolution and aid in visualization of pollution patterns as well as allow quantification of air pollution gradients associated with local emission sources and identification of hotspots (see an example output created for City of Somerville in the graphic on the right).



Instruments. We will monitor ultrafine particles (a marker of fresh combustion emissions, defined as particles <100 nm) at 3 locations per community and PM2.5 and PM10 at up to 7 locations per community. PM2.5 and PM10 will be monitored using Dylos 1700s. EPA has evaluated¹ and published a standard operating procedure² for this sensor upon which we will base our procedures. Particle number concentration (dominated by ultrafine particles) will be monitored using Testo Inc. DiSCmini. We elected to use Dylos 1700s and DiSCminis (which will be purchased with requested funding; see Budget) because they meet our requirements for accuracy and precision, they are generally easy to operate and maintain, they are cost-effective, and they have been widely and successfully used in air quality monitoring projects (example, Carvlin et al. 2017 for Dylos and Chen et al. 2022 for DiscMini in a CARB study focused on local high pollution zones). The DiSCminis will be periodically benchmarked against a factory calibrated CPC (TSI 3775), which will also be used in the TAPL for mobile monitoring. Please see Quality Assurance Statement for details including collocation with regulatory-grade monitors. The DiSCminis and Dylos 1700s will be installed in temperature controlled outdoor boxes.

Data from LMN and LMCP will undergo QA/QC checks by the study team, and then shared with the CAB and with our community partners as we develop recommendations for better air quality management and community-scale mitigation. Specifically, we will (1) make data from LMN sites publicly available (e.g., rationale for site selection, the procedures of installing and maintaining the sites and data interpretation, raw data, and data products such as figures and summary tables), and (2) compare local data to nearest regulatory sites and other research datasets (e.g., previous TRAP studies in Boston area (Hudda et al., 2020; Patton et al., 2014, Simon et al., 2014, Padro-Martinez et al., 2012)) to provide context on local air quality.

Objective 3. Develop greater understanding about air quality issues with residents through surveys, listening sessions and report-backs as part of the community assessment.

For each community, the project team, with help from the CAB, will survey residents and host listening sessions to learn about residents' perceptions of air quality in their community and whether they feel at risk. The team will secure a ~100 surveys per community by stratified demographics (meaning goals related to race, income, language isolation and age). These surveys will be available online. In addition, project team members will administer paper surveys in person at community events, food pantries, churches and other community gathering locations. Surveys will be translated into Spanish, Haitian-Creole, Portuguese, and Mandarin, and translators will be present during in-person sessions. The survey will include questions about health concerns

related to air quality, perception of air quality in the community, and specific sites of concern such as schools, residential and recreation areas near high traffic roadways. The team will then host one listening session (interpreters available) in each of the communities to present survey and LMN monitoring results and further explore community concerns. Informed by the feedback we receive, we will then undertake more granular monitoring within each community that addresses a key local concern with a relatively shorter-term monitoring deployment in LMCPs (e.g., six months or two phases of 2-3 months each in warm and cold seasons). Findings will again be reported back to the community and the results will be made publicly available (e.g., MyRWA website).

A major output will be public-facing data products (figures, maps, tables) for sharing and explaining the results (i.e., ARCGIS maps, report cards). All public-facing materials will be translated into Spanish, Haitian-Creole, Portuguese, and Mandarin. The CAB will serve as leaders in developing tools that help to elevate awareness of both current air quality near major transportation infrastructure and potential community actions that could be aimed towards reducing exposures to TRAP. The team will hold one report-back session per community in which the results of the LMN and LMCP efforts are presented and explained. The CAB will work with the project team to further identify opportunities to share results—including at cultural events, faith-based organization events, school clubs and parent engagement activities, and language-specific communication channels (e.g., radio, social media, ESL classes).

Objective 4. Develop mitigation strategies for each community.

Mitigation strategies including personal behavior change and system change will be considered. Personal behavior change could include avoiding roads with high traffic volumes, recreating and exercising in open spaces away from traffic, and closing windows during rush hours. System changes could include changes to the built environment (e.g., dedicated bus lanes, improved public transit, vehicle use limitations/restrictions), and changes to municipal or state policies (such as more rigorous and uniform enforcement of the anti-idling laws). The CAB, the project team, and our community partners will all participate in developing ideas and implementation strategies for system changes consistent with the needs and capacities of their community. The project team will regularly engage with municipal leadership (Mayor’s offices, city, and school council members) as key stakeholders on these mitigation efforts. Additionally, the project team will report results to the Metropolitan Area Planning Council (MAPC), Metro Mayors Coalition, Boston Region Metropolitan Planning Organization (MPO) including the Central Transportation Planning Staff (CTPS), and other statewide or regional coalitions on transportation planning.

1B. Project Significance

Our project comes at a time when communities have access to American Recovery Care Act funding, which communities can use for infrastructure improvements. Thus, this project can help municipalities direct this funding to improvements that community members want to see and will thereby improve resident quality of life.

Combined, our four communities have a population of ~200,000, cover ~15 square miles, and are situated at the core of the metropolitan area's industry, commerce, and transportation infrastructure (supporting its airports, shipyards, and highways). These communities contain linguistically isolated populations dominated by people of color (see Figure 2). These communities face health issues and poor air quality, and were identified by Massachusetts as the hardest hit by COVID. In addition, Everett and Malden have more than twice the state

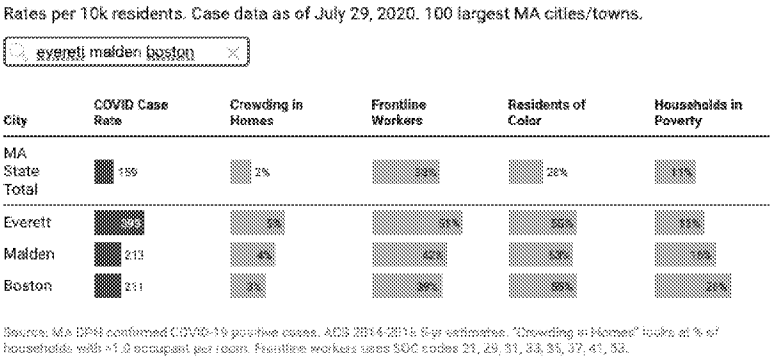


Figure 2: COVID-19 positive cases and select socioeconomic data

average rate of crowding in homes and higher rates of frontline workers and residents of color than the state average (see Figure 2). These vulnerability factors likely played a role in the higher rates of COVID-19 observed in these communities.

Environmental Context. These communities have a long history of intense industrial use and bear a disproportionate legacy of water and soil contamination compared to other communities in the Boston area (<https://mysticriver.org/pollution>). There are metal recycling facilities, a 20-MW power plant, a liquid natural gas facility, airport parking and freight forwarding companies, boat salvage and repair facilities, construction junk yards and self-storage buildings. A dominant land-use feature in these communities is to support regional transportation infrastructure including highways, commercial waterways, railroads, and a major airport (Logan International Airport). For example, Chelsea Creek is the storage hub for 80% of New England’s heating fuel, road salt for more than 300 cities and towns, and 100% of the jet fuel used at Logan. Many residents of Everett, Malden, Charlestown, and East Boston live near roads with high levels of vehicle emissions. According to the Pollution Proximity Index (PPI) – developed by the Metropolitan Area Planning Council (MAPC) – 34% of residents in Greater Boston live in areas with the highest PPI scores. Furthermore, the burden of proximity to pollution is distributed unequally along lines of race and ethnicity, with over 45% of Black and Asian residents and over 50% of Latino residents living in areas with the highest PPI scores compared to less than 30% of White residents.

Public Health Context. Across all age groups, the 2017 age-adjusted rate of emergency department visits due to asthma was 78.2 per 10,000 people in Everett (significantly higher than the state average of 58.2 per 10,000). A Boston Public Health Commission report found that among children ages 5 to 17, there were 172.5 asthma emergency department visits per 10,000 residents in Charlestown, and 56.2 per 10,000 in East Boston (as of 2014-2015), with the city-wide rate for Black children (267.8 per 10,000) 3.5 times higher than for White children (77.3), and the rate for Latino children (156.7) twice as high as for White children. According to the CDC Behavioral Risk Factor Surveillance System (BRFSS) 2019 survey, the age-adjusted prevalence of asthma among adults was 10.7% in Everett and 10% in Malden, compared to 9% at the county level (Middlesex County); it was 10.0% in Charlestown and 10.5% in East Boston, compared to 10.3% at the county level (Suffolk County). The age-adjusted prevalence of heart disease among adults was 5.9% in Everett and 5.6% in Malden, compared to 4.5% at the county level. Preliminary results of Cambridge Health Alliance's recent Community Wellbeing Survey suggest strong interest among residents of Everett and Malden in understanding and improving air quality in their communities. Among Everett residents, 47% of survey respondents (n = 118) say the air in their community is not always safe to breathe, and 12% do not know if the air is safe. Among Malden residents, 34% (n = 192) say the air in their community is not always safe to breathe, and 7% do not know.

2A. Community Partnerships

Overall Structure. The project team consists of a coalition of community partners representing environmental advocacy (MyRWA), transportation-related advocacy (AIR, Inc. and STEP), health care (CHA), academia (Tufts, BU) and government (City of Malden, City of Everett). The project benefits from our combined 100 years of environmental research, advocacy and community engagement experience, and the diverse skills including public health, environmental monitoring, and partnership development that can deliver air quality management strategies at the regional scale.

Accordingly, the coalition is led by MyRWA, a regional nonprofit with a demonstrated record of delivering environmental solutions in the region. It is supported by air pollution monitoring and social work expertise academics (whose credentials are discussed in Section 6C). Table 1 below summarizes the experience and expertise of the partnership that are also detailed in the following text.

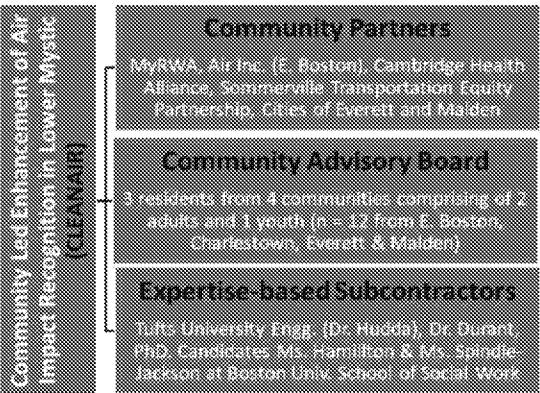


Table 1: Summary of the expertise, resources and activities and contributions of the community partners.

Expertise and Resources	Activities & Contributions to Study
MyRWA: 22 years of environmental monitoring, mitigations and community engagement experience	
Environmental field monitoring programs; data sharing to regulatory agencies and municipalities; scientific data communication with community; collaborations with 20 municipalities; robust engagement.	Project management, manage subawards and contractors, lead communications and host website, conduct field monitoring.
AIR Inc.: 41 years of environmental advocacy and community engagement experience	
Long-standing relationships and history in working in East Boston; part of several air quality studies and coalitions on air quality; advocacy for health improvements	Lead community engagement in East Boston, data analysis, contribute to community education by translating scientific data into understandable language
CHA: 10 years of air quality and 40 years of community engagement experience	
Community health, health education, community engagement, capacity building, data communication with diverse audiences, policy and advocacy for health improvement.	Lead in connecting the air quality and public health issues (messaging and potential behavior change opportunities); lead community engagement in Malden and Everett
STEP: 16 years of air quality and CBPR experience	
Experience in 7 CBPR air quality studies performing research design, study implementation, outreach, education, surveyor/interviewer training, recruitment strategy, regional collaboration with EJ and planning agencies	Study design, outreach and recruitment strategy, data analysis, contribute to developing community education by translating scientific data into understandable language

Mystic River Watershed Association (MyRWA). Since its founding in 1972, MyRWA, our lead partner, has combined scientific monitoring and data sharing with community action and on-the-ground improvements to its 21 municipalities. Examples of the experience and expertise that MyRWA brings to the project include:

- Running and sustaining long-term environmental monitoring programs (water quality (22 years), river herring (10 years) and heat/air (1 year) programs)
- Gather, analyze and communicate the credible high-quality actionable field data and data sharing to agencies and municipalities (such as the annual Water Quality Report Card)
- Translate scientific data to help residents stay safe (such as, through the boating advisory – a modeling program that predicts when it is safe to boat on select spots on the Mystic)
- Collaborative relationships with 20 municipalities and delivering mitigations through community-led design that included an advisory board, surveys and listening sessions in Malden, Charlestown, and Everett.
- Robust engagement efforts, including working with 1,200 volunteers a year; educating 1,100 students and reaching 20,000 residents through effective communications of environmental conditions.

Cambridge Health Alliance (CHA). CHA is a public safety net health system with a mission of improving the health of patients and communities. CHA has longstanding partnerships with communities in Everett and Malden and brings clinical and public health resources to bear in understanding the impacts of air quality on health outcomes. Renee Cammarata Hamilton, Director of the Health Improvement Team and Laura McNulty, Community & Population Health Epidemiologist will serve as leads on this project. Renee brings experience in coalition development and facilitation, and collective impact strategy development to advance health equity. Laura McNulty is an expert in community-based health care, public health, and social service program design and management, in addition to assessment, evaluation, and research related to health equity and social determinants of health.

Somerville Transportation Equity Partnership (STEP). STEP is a 501C3 non-profit advocating for improved transportation in Somerville, MA and for reducing the health effects of traffic related air pollution (TRAP) seriously impacting its EJ neighborhoods. STEPS's research projects funded by NIEHS, HUD and the Kresge Foundation are detailed on the team website www.cafehresearch.org. Building on experience in designing and implementing the NIEHS funded Community Assessment of Freeway Exposure and Health (CAFEH), and six related studies, Mr. Zamore and Dr. Reisner will contribute by sharing their 16 years of experience addressing scientific and technical research design as well as utilizing community based participatory research (CBPR) approaches in studying the health effects of traffic related pollution. STEP has extensive experience addressing the scientific challenges in community engaged data collection and engaging with community organizations, residents, and local officials to facilitate data collection and measurement of pollutants.

Air Impact Relief Inc. (Air, Inc.) AIR, Inc. serves East Boston and since its founding in 1981, has advocated for and achieved mitigation and pollution reductions. The group has effectively used the review of Logan Airport Environmental disclosures, public information forums, coordinated advocacy and diverse coalitions of local and national partners to advance goals. AIR, Inc. will focus on East Boston and support air quality awareness and interventions to initiate new advancements in community and programmatic behavioral outputs including localized pollution data interpretation and storytelling and location-based pollution avoidance recommendations. Air, Inc. will serve as a technical expert on air quality monitoring, as well as help with engagement efforts in East Boston. It will support the shifting of focus in this work from data collection to data interpretation which represents an important environmental justice outcome.

City of Everett and City of Malden. The municipalities have committed to fully participating throughout the life of the project. Both municipalities have successfully partnered with MyRWA in the past toward creating a new park along the Malden River at the Malden DPW site, installing a trash trap at the head of the Malden River, restoring habitat and creating native meadow at Rivergreen park, and advocating for a pedestrian bridge across Mystic. They will assist in siting the long-term air quality monitoring station; assist with identifying community members for the CAB; work with project team on identifying potential hotspot locations for monitoring; and engage with the CAB on mitigation opportunities.

Benefits to Partners and Sustainability of the Partnerships. Together all partners have identified a lack of understandable air quality data for the Lower Mystic, and the importance of engaging residents in being part of the solution. For all partners they see this lack of data in inequitable public health outcomes, and they are excited to be part of this project to help drive interest in addressing air quality concerns with mitigation strategies and community engagement. Additionally, this will help address a common issue across the Lower Mystic, which has been a longstanding goal of STEP, as articulated here: *“While we in Somerville have advanced our knowledge and have experienced some beneficial outcomes from our work in our city we are part of a larger region that needs to reduce exposure to TRAP. It has always been our goal to increase knowledge of the health effects of TRAP and to develop approaches to reducing exposure beyond Somerville's borders by working in collaboration with our neighboring communities. This research study will enable us to do this.*

Expected long-term outcomes will not be completed within the term of the grant, so MyRWA and other partners are committed to pushing the partnership forward in each of the communities by committing to trying to find funding for the work. **A significant strength of this proposal is that MyRWA is seeking to expand its substantial environmental monitoring and advocacy capabilities to tackle air quality concerns in the Lower Mystic. After the 3-year funding period ends, MyRWA will continue to build capacity for this work by raising funds to continue to employ the new hires on the project.** Similarly, all partners in the coalition also have a very successful record of obtaining federal, state, and local funding to continue environmental work. (See resumes of our partners.)

2B. Community Engagement At its core this project is about hearing from the community and stakeholders about air quality issues that they are concerned about, designing and involving them in studies to learn more about the issue and then sharing the results widely with a focus on building capacity to implement mitigation strategies. Using community engaged research approaches, the project team includes a CAB, and a coalition of community-based organizations and municipal leadership from each of the four municipalities where studies take place. The **Community Advisory Board (CAB)** will be made up of residents from the 4 municipalities and will represent the populations most negatively impacted by poor air quality. Coalition partners and community members can nominate others or themselves to serve on the 12 person CAB (3 residents from each community). CAB applicants will be asked to complete a short application for the project team to review applicants. Once the CAB is developed, it will be involved in all aspects of study design and community engagement. By being involved in every step of the process, the CAB will be able to ensure that the report out of the study is understandable and actionable for residents. This will help residents engage with municipalities, the project team and others on potential mitigation efforts.

Data sharing with the community. By design, the study periodically and purposefully not only shares data with communities but also seeks feedback on data. This data will be shared on MyRWA's website and be translated into multiple languages. MyRWA has extensive experience sharing actional data with residents and stakeholders-as demonstrated by our water quality report card, which the US EPA has relied on to give the Mystic River Watershed a formal grade every year since April 2007. This report card format, which MyRWA developed, is now used by the two other watershed organizations in Boston on the request of the US EPA (<https://www.epa.gov/mysticriver/mystic-river-watershed-report-cards>). Second, MyRWA recently completed a heat mapping campaign in the watershed with the help of 80 volunteers. This data is now available and MyRWA is working on interventions in target communities (<https://resilient.mysticriver.org/wicked-hot-mystic>).

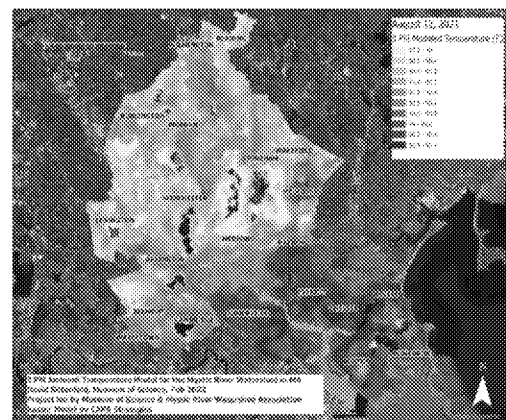


Figure 3: An example of data output visualized for a community report back that was led by MvRWA

2C. Community-Based Organization Set-Aside N/A

3. Environmental Justice and Underserved Communities

Benefits to EJ communities. The proposed project benefits environmental justice (EJ) communities by 1) siting studies in communities that have been negatively impacted as demonstrated by EJScreen and COVID data; and 2) building capacity among residents that have been disproportionately impacted by poor air quality to lead to actionable change at both the individual and systemic level. The individual level includes understanding more about personal behaviors community members can alter to protect their health and how to be more involved in mitigation actions with community groups and municipalities. The systemic changes would include being directly involved in potential mitigations, and also change how municipal stakeholders and decision-makers (boards of health, planners, mayors and town managers, etc.) respond to air quality concerns from their constituents.

Data from EJScreen shows that the four communities included in this proposal, Charlestown, Everett, East Boston and Malden, are in higher environmental risk categories than the rest of Massachusetts or the rest of EPA Region 1; see Table 2. When we look at 2017 diesel particulate matter, we see that all four communities are between the 86th-100th percentile for exposure to diesel particulate matter. This is consistent with the data that shows that residents of the communities are more likely to live within 500 meters from a major road. Transportation-related pollutants also affect the health of the residents, as is demonstrated in the air toxics cancer risk and respiratory hazard index percentiles. All of the communities fall within the 95th-100th percentile for cancer risk from the inhalation of air toxics and their exposure to respiratory hazards. It is important to attend to air pollution issues in these communities as demographically these communities tend to include people who are linguistically isolated, there is a large share of their populations who identify as people of color, and there are significant amounts of young children and elderly people living in these communities.

Table 2: Summary of select demographic and environmental indicators from EPA EJ screen for our communities

Indicators By Community		Percentile in Massachusetts			
		Charlestown*	Everett	East Boston ⁺	Malden
<i>Environmental</i>					
	2017 Diesel PM	98	87	93	86
	2017 Air Toxics Cancer Risk	99	99	99	99
	2017 Air Toxics Respiratory HI	99	98	99	96
	Traffic Proximity	95	77	90	75
<i>Demographics</i>					
	People of Color	57	84	90	82
	Linguistically Isolated	68	89	97	89
	Under Age 5	86	63	64	63
	Over Age 64	29	29	14	37
*Charlestown is a neighborhood in Boston, MA. The data presented in this table is based on the following five census tracts: 25025040600, 25025040300, 25025040100, 25025040401, 25025040801					
East Boston is a neighborhood in Boston, MA. The data presented in this table is based on the following five census tracts: 5025050200, 25025050600, 25025050700, 25025050400, 25025050101					

Engaging EJ communities: The project team has been intentional in developing strategies to engage residents who are disproportionately impacted by poor air quality in being part of the project and helping them be drivers

for local change. CAB membership will be representative of communities in terms of age, race, language, and other EJ indicators. Participating in the CAB will allow for residents who have been disproportionately affected by poor air quality to inform research on the subject, to gather comments and concerns from the broader community, as well as to help to identify strategies to educate the community and to develop long term interventions strategies. CAB members will be compensated for their participation. The project team will use this same intentionality in completing the surveys and listening sessions to ensure that we have a representative final sample. The team will translate the surveys in the following languages: Portuguese, Spanish, Haitian-Creole, and Mandarin. The project team will make the surveys available online and through partner networks. Using random sampling techniques (e.g., approaching every fifth person to survey) the team will go to various community settings (health clinics, food pantries, community events, etc.) to collect in-person, paper surveys. To make listening sessions accessible to residents who are linguistically isolated, we will offer interpreters for Portuguese, Spanish, Haitian-Creole, and Mandarin. Childcare and food will be provided, and we will identify locations that are welcoming and inclusive for the communities. This same intentionality will be used in sharing the results and engaging community members in potential mitigation solutions.

4A. Expected Project Outputs and Outcomes

We believe our study is highly responsive to EPA’s strategic plan because we aim to “improve air quality and reduce localized air pollution and health impacts” and we are working to build capacity in “low-income marginalized communities that for decades have been overburdened with air pollution and other environmental hazards.” We will do so by delivering the outputs and outcomes stated in Table 3.

Table 3: Summary of our outputs and expected short, medium and long-term outcomes.

Outputs	Short-term Outcomes	Intermediate Outcomes
<ul style="list-style-type: none"> 4 long-term monitoring network sites deployed (>2 years of monitoring each) Up to 24 additional short-term monitoring sites deployed in response to local community concerns 12-member CAB & 400 resident surveys completed in 4 communities 1-2 listening and 1 report-back sessions completed in 4 communities Website for public data access Air quality information disseminated to 1000 residents via project website, social media, public events and meetings, and printed materials 1 meeting with regional organizations (MAPC, CTPS, MPO, Metro Mayors Coalition) and local municipalities held to share findings Written accessible reports on data interpretation methods and best practices for co-production of actionable data to support local decision making on traffic-emissions related air quality management 	<ul style="list-style-type: none"> Increased access to actionable air quality data and information on traffic impacts in 4 communities through the robust air quality assessments available to residents and stakeholders Wider use of best practices for co-production of responsive & actionable air quality information with communities in our region Increased awareness among residents about drivers of air quality issues in their municipality and region. Greater coordination among municipalities, researchers, community groups around air quality issues and priority projects. 	<ul style="list-style-type: none"> Municipal planning and regional transit decisions informed by air quality data and needs of 4 communities. At least one mitigation for built environment, traffic flow changes, and/or municipal or state policies prioritized per community Residents have resources to make informed choices to protect their health. Residents have greater understanding about mitigations for addressing air quality Local and regional bodies get new actionable information from the project
	Long-term Outcomes	
	<ul style="list-style-type: none"> Reduction of human exposure to traffic-origin air pollutants due to mitigation efforts Cohort of residents have knowledge, tools and relationships to continue to make improvements to air quality and other mitigation efforts. Local and regional bodies change policies and report those changes to communities. 	

4.B. Performance Measures and Plan

MyRWA will meet monthly with the subcontractors to discuss progress on the timeline and milestones as well as to review budget expenditures. Additionally, we will meet at least quarterly with our municipal partners to review progress on milestones (identified in Figure 4 and Table 4 below which also identifies responsibilities of various partners) and share findings from community surveys, listening sessions, CAB meetings, and air monitoring. These meetings will serve as an opportunity to track progress as well as to help build capacity among the project team about addressing air quality locally.

To measure outcomes, we will track the number of residents involved and how feedback was integrated into study and mitigation design. For CAB members we will conduct pre- and post-surveys about the experience and their willingness to continue to participate in efforts to improve air quality. For other community engagement efforts including listening sessions and other community meetings we will use feedback forms and other evaluations to help inform our understanding of resident perceptions.

4C. Timeline and Milestones

The timeline for progression of work in one community is shown in Figure 5. Milestones by quarter are identified in Table 4, which also lists major tasks. Overall project management tasks will occur regularly (weekly, month to quarterly) and discussed in the previous section.

5. Quality Assurance Statement: Attached separately. Please also see letter from MA Dept. of Env. Protection on collocation of sensors with regulatory site.

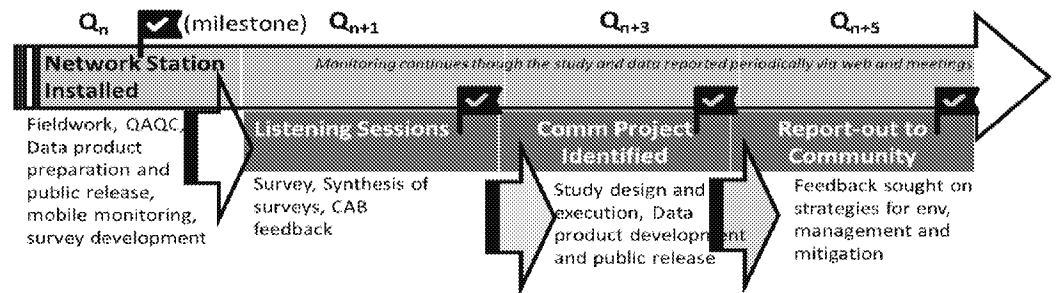
6A. Past Performance & B. Reporting Requirements:

Following are the three federal grants and one state grant from the past three years:

1. 2020-2023. Dept of Interior. NAWCA. (\$1,267,684.51).

MyRWA in partnership with the Town of Essex, City of Chelsea, City of Malden, City of Woburn, GreenRoots, The Nature Conservancy and the Duxbury Beach Reservation, are completing eight restoration and enhancement projects to wetland and shoreline habitat within the Mystic River watershed and greater coastal MA. To date all quarterly reports and financials have been completed on time, and the deliverables are on schedule.

2. 20018-2021 EPA Healthy Communities Grant (\$25,000). MyRWA deployed a multilingual, multicultural outreach and education campaign to ensure that users are fishing safely in Chelsea, East Boston and Somerville. Deliverables and reports were submitted on time. The final grant reports were provided, and the program was successfully closed out 9/30/21.



Process unfolds in each of the four communities during Q2-Q9 of the study, starting Q2-Q4.

Figure 4: Graphical representation of the work and process in each community

Table 4: Major tasks, timeline of work and a Responsible, Accountable, Consulted and Informed (RACI) matrix for all project partners and personnel.

Project Task	36 month schedule in quarters	MA/MA	CHA	AIR Inc.	STEP	Tufts	Durham	Hamilton	Sydney-Jackson	COE, COM
Management										
Management	Q1-12	R								
Project Meetings	Q1-12	R	C	C	C	C	I	C	C	I
Reporting (quarterly & final)	Q1-12	R	C	C	C	C		C	C	I
Project website* and data stream maintenance	Q2-Q12	R	C	C	C	C	I	I	I	I
Air Quality Monitoring										
Select monitoring network locations*	Q1	R	C	C	C	C	C	I	I	C
Install and run network sites*	Q1-Q12	A, R	I	I	I	R	R	I	I	C
Identify* and design community projects	Q3-Q6	A	C	C	C	R	R	C	C	C
Conduct and report-out* community projects	Q4-Q9	A, R	I	I	I	R	R	I	I	I
Data QA/QC and public release	Q2-Q12	A, R				R	R			
Data Interpretation	Q2-Q7	A, R	C	C	C	R	R	C	C	
CAB										
Develop CAB Structure, Charter, Payment and	Q1	A	C	C	C	C	C	R	R	C
CAB recruitment	Q1-Q7	A, R	C	C	C	C	I	R	R	C
CAB Quarterly meetings	Q1-12	A, R	I	I	I	I	I	R	R	I
Engagement										
400 surveys*	Q3-Q9	A	C	C	C	C	I	R	R	C
Listening Sessions*	Q3-Q9	A	C	C	C	C	I	R	R	C
Data reports & communications tools	Q8-Q12	A	C	C	C	I	I	C	C	I
Report-Out sessions* & public events	Q8-Q12	A	C	C	C	I	I	R	R	C
Mitigation										
Stakeholder meetings	Q1, Q9, Q11	A	C	C	C	I	I	I	I	C
Develop mitigation strategies	Q3-Q12		C	C	C	C	I	I	I	C

A: Accountable; R: Responsible; C: Consulted; I: Informed; *major milestones

3. 2016-2019 EPA Urban Waters Small Grant (\$75,000). MyRWA created a multimedia education program about stormwater pollution for a regional coalition of municipalities (Chelsea, Everett, Malden, Somerville, Medford, Reading, Lexington, Watertown, Melrose, Winchester and Woburn). On the request of the EPA—we added a litter research component to this grant, thereby extending the completion date by 1 year and adding deliverables related to litter on the Mystic River. Deliverables and reports were all completed on time, and the grant was successfully closed out.
4. 2021-2023 Dept of Environmental Protection 319 (\$475,803). Constructing 50 infiltration trenches in 3 municipalities, offering cost-effective phosphorus reduction in a highly urbanized setting. To-date all deliverables are on-target and reports have been submitted.

6C. Staff Expertise

David Queeley, Deputy Director of Projects, will serve as the project lead. Dave has three decades of experience helping build vision, capacity, and constituencies for sustainable cities, neighborhoods and initiatives. Most recently, Dave served as the Director of Eco-Innovation for the Codman Square Neighborhood Development Corporation (CSNDC). He currently serves as an Associate Park Commissioner for the City of Boston and served on the Mayor's GoBoston 2030 Task Force. **Andy Hrycyna**, watershed scientist at MyRWA since 2014 and leads the water quality and green infrastructure improvements, will assist with data collection, and **Daria Clark**, Engagement Manager, will develop communications deliverables. MyRWA will contract with **Greer Hamilton and Adrianna Spindle-Jackson**, doctoral candidates at Boston University School of Social Work, will co-lead the community engagement aspect of the project including the development and management of the CAB, survey development and analysis, planning and hosting of community listening sessions and report-back sessions, and supporting additional community engagement efforts. See resumes for details of relevant experience. **Tufts University** will be a subaward on the grant, and work will be led by **Dr. Neelakshi Hudda** (Research Assistant Professor, School of Engineering) with 15 years of air quality monitoring related experience. She will support the monitoring with Tufts mobile lab and also supervise monitoring network and assist with designing community projects. She will also assist with regular collocation of sensors with regulatory monitors and lab tests. **Dr. John Durant** will serve as the QAQC officer and advise on study design, pollutant monitoring issues, data products and reporting. His primary area of expertise is measurement and modeling of air pollutants with 25 years of experience. He has served as QAQC officer on several air and water quality studies funded by various federal agencies (NIH, EPA, HUD, etc.). See resumes of our academic experts that detail the relevant experiences.

7. Budget

Expenditure of Awarded Funds: MyRWA will track expenditures using Xero, our accounting software. Every month MyRWA's Operations Manager will run a budget report to share with the project manager. The project manager will compare expenditures with budget and timeline, to ensure we are meeting milestones and expending the funds in a timely manner. Any adjustments outside of 10% will be reported to EPA.

Line Items	EPA Request	Justification & Reasonableness of Cost
David Queeley, Dep. Director of Programs \$57.43/h x 10h/week x 52 weeks x 3 y	\$89,591	Management of overall project, budget, consultants, subawards and reporting. Lead on mitigation planning.
Daria Clark, Engagement Manager \$36.27/h x 6.5 h/week x 52 weeks x 3 y	\$36,778	Lead on communications to stakeholders/residents, development of web materials, website, and help secure 400 survey responses and co-host listening sessions.
Andy Hrycyna, Watershed Scientist \$36.27/h x 6.5 h/week x 52 weeks x 3 y	\$36,778	Lead on day-to-day monitoring-related fieldwork (installation, regular maintenance and service, data acquisition), QAQC and communications with study team and academic partners.
TOTAL PERSONNEL	\$163,147	
17.2% on all personnel	\$28,061	
TOTAL FRINGE BENEFITS	\$28,061	
Mileage	\$7,000.00	Regular travel to field sites in four communities for monitoring, surveying, public meetings; also travel for CAB members
TOTAL TRAVEL	\$7,000.00	

UFP Disc Mini-3 @ \$14,990 w/o the quoted discount	\$42,750.00	The DiSCmini can reliably monitor ultrafine particles related to transportation emissions, which are of key interest to our study partners.
TOTAL EQUIPMENT	\$42,750.00	
Dylos 1700 PM2.5 PM10 - 10 @ \$475	\$4,750.00	Updated version of DC 1100 evaluated by EPA; battery and AC operated with PC interface and a menu that allows the users to enter a correction factor based on readings from the nearest regulatory station.
Recalibration contracts 3 @ \$1,669	\$5,007.00	The DiSCminis will be recalibrated once during the study and periodically benchmark against a factory calibrated TSI CPC 3775 (which will also be used in the TAPL for mobile monitoring)
Field laptop	\$725.00	For air quality monitoring data management, acquisitions, etc.
Misc. materials and supplies for monitoring and collocation	\$1,500.00	Miscellaneous hardware, electrical supplies and electricity costs.
Outdoor NEMA weatherproof shelter	\$1,200.00	DiSCminis and Dylos 1700s will be installed in temperature controlled outdoor boxes.
3 ipads	\$987.00	For survey collection to reduce paper.
Food, meeting space, supplies	\$9,000.00	8 community events; 12 CAB
Printing for materials	\$1,200.00	Surveys, public education
TOTAL SUPPLIES	\$24,369.00	
Greer Hamilton	\$24,000.00	Co-lead CAB, listening sessions, survey collection and analysis, and other community engagement efforts.
Adrianna Spindle-Jackson	\$24,000.00	Co-lead CAB, listening sessions, survey collection and analysis, and other community engagement efforts.
Translation	\$1,000.00	Surveys into Spanish, Portuguese, Haitian-Creole & Mandarin
Interpreter	\$4,000.00	For listening sessions and report outs for EJ communities
Childcare for 8 listening sessions/events	\$2,000.00	In Massachusetts, the average cost of childcare is \$17.66 per hour-funds for CAB & events
Contract to Dr. Durant (3 X \$5,000/yr)	\$15,000.00	Lead quality assurance effort; assist with study design, air quality monitor deployment, data processing and interpretation, development of data products, and reporting
TOTAL CONTRACTUAL	\$70,000.00	
Subaward to Tufts University	\$59,099.00	The Principal Investigator, Dr. Neelakshi Hudda, will devote .75 calendar months of support in each year and she will be supported by a graduate student (1 month). She will (1) lead mobile monitoring to support community projects; (2) assist with set-up and maintenance of monitoring sites, collocation with regulatory sites and side by side tests in the lab; (3) assist with data interpretation and quality control; (4) assist with troubleshooting of equipment; (5) assist with manuscript preparation and publication
Incentives.	\$2,000.00	Gift cards for survey respondents and or listening session attendees
CAB payments Quarterly meetings	\$13,200.00	Quarterly CAB payments (12 people X \$50/per person x 12 meetings) + \$6,000 for 120 hours of work outside the quarterly meetings.
Subaward to AIR, Inc.	\$12,000.00	To cover staff time for study design, outreach and recruitment and engagement in East Boston
Subaward to STEP	\$12,000.00	To cover staff time for study design, outreach and recruitment and engagement in East Boston
Subaward to Cambridge Health Alliance	\$24,000.00	To cover staff time for study design, outreach and recruitment and engagement in East Boston
TOTAL OTHER	\$122,299.00	
De Minimis Indirect rates	\$42,353	On all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel, and up to the first \$25,000 of each subaward.
TOTAL INDIRECT	\$42,353	
TOTAL FUNDING	\$499,979	

References

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- Chen, Y., Gu, P., Schulte, N., Zhou, X., Mara, S., Croes, B. E., ... & Vijayan, A. (2022). A new mobile monitoring approach to characterize community-scale air pollution patterns and identify local high pollution zones. *Atmospheric Environment*, 118936.
- Hudda N, Simon MC, Patton AP, Durant, JL, “Air quality improvements in a near-highway urban neighborhood during the COVID-19 pandemic”, *Science of the Total Environment*, <https://doi.org/10.1016/j.scitotenv.2020.140931>.
- Patton AP, Zamore W, Levy J, Perkins J, Brugge D, Durant JL, “Spatial and temporal differences in traffic-related air pollution in three urban neighborhoods near an interstate highway”, *Atmospheric Environment*, 2014, 99: 309-321.
- Padró-Martínez LT, Patton A, Trull JB, Zamore W, Brugge D, Durant JL. “Mobile monitoring of particle number concentration and other traffic-related air pollutants in a near-highway neighborhood over the course of a year”, *Atmospheric Environment*, 2012, 61, 253-264, doi: 10.1016/j.atmosenv.2012.06.088.
- Simon MC, Hudda N, Naumova E, Levy JI, Brugge D, Durant JL. “Comparisons of traffic-related ultrafine particle concentrations measured in two urban areas by central, residential, and mobile monitoring,” *Atmospheric Environment*, 2017, 169, 113-127; DOI: 10.1016/j.atmosenv.2017.09.003.

¹ <https://www.epa.gov/air-sensor-toolbox/evaluation-emerging-air-sensor-performance>

² https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NERL&dirEntryId=308087&simpleSearch=1&searchAll=dylos+dc110

Project Congressional Districts:

MA-005: Charlestown, MA 02129 (Suffolk County), East Boston, MA 02128 (Suffolk County),

MA-007: Everett, MA 02149 (Middlesex County), and Malden, MA 02148 + 02180 (Middlesex County)

Project Locations:

Charlestown, MA 02129 (Suffolk County), East Boston, MA 02128 (Suffolk County), Everett, MA 02149 (Middlesex County), and Malden, MA 02148 + 02180 (Middlesex County)

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Manifest for Grant Application # GRANT13580130

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 23337 bytes)

Forms Included in Zip File(total 6):

1. Form ProjectNarrativeAttachments_1_2-V1.2.pdf (size 16019 bytes)

2. Form SF424_3_0-V3.0.pdf (size 24166 bytes)

3. Form SF424A-V1.0.pdf (size 22829 bytes)

4. Form EPA4700_4_3_0-V3.0.pdf (size 22649 bytes)

5. Form OtherNarrativeAttachments_1_2-V1.2.pdf (size 15897 bytes)

6. Form EPA_KeyContacts_2_0-V2.0.pdf (size 37265 bytes)

Attachments Included in Zip File (total 4):

1. SF424_3_0 SF424_3_0-1234-Project Locations.docx application/vnd.openxmlformats-officedocument.wordprocessingml.document (size 12525 bytes)

2. ProjectNarrativeAttachments_1_2 ProjectNarrativeAttachments_1_2-Attachments-1237-Workplan_MyRWA.pdf application/pdf (size 961838 bytes)

3. SF424_3_0 SF424_3_0-1235-Congressional Districts.docx application/vnd.openxmlformats-officedocument.wordprocessingml.document (size 12406 bytes)

4. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1236-Attachments_MyRWA.pdf application/pdf (size 4983092 bytes)